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THE

CANADIAN AGRICULTURIST,

A MONTHLY JOURNAL

DEVOTED TO

AGRICULTURE, HORTICULTURE, SCIENCE,

AND

DOMESTIC AND RURAL ECONOMY.

Illustrated with Engravings.

EDITED BY

GEORGE BUCKLAND AND WILLIAM McDOUGALL.

VOL. III.—1851.

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TORONTO, CANADA WEST,

WILLIAM McDOUGALL, PROPRIETOR.

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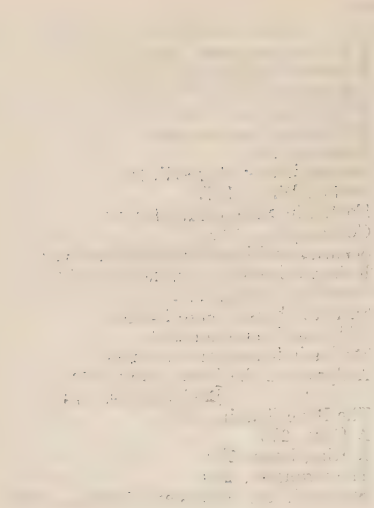

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, WILLIAM McDOUGALL, } EDITOR, ASSISTANT EDITOR.

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A FEW WORDS TO OUR READERS—THE OLD YEAR AND THE NEW.

The present offers a fitting opportunity for making a few remarks of a seasonable nature referable both to our readers and ourselves, and the great interests which it is the leading object of our journal to protect and promote. Another year, completing the first half of the nineteenth century, has glided away from us, and is gone to tell its tale of good or ill, of whatever mortals have done within its circuit. At such an epoch as the present, every well-disciplined mind must feel the peculiar force of that great salutary lesson which speaks of a moral responsibility, which none can possibly evade; and of those solemn and important duties which men owe to one another, to their country and their God. At the end of a year, all prudent men of business balance their accounts, that they may ascertain exactly how they stand, and the actual progress, if any, which they have made. It would be a happy thing, if men evinced the same reasonable solicitude, in regard to their intellectual and moral condition, since it is more especially upon the latter that all true enjoyment and the permanent prosperity of nations depend.

The first feeling which a retrospect of the old year is fitted to awaken, both in individuals and communities, is that of devout gratitude to the Giver of all, for mercies received, while the opening of the new year inspires the industrious citizen and humble Christian, with the cheering hope of a continuance of the same, blended with an increased desire to be found more worthy of

them. There may be few individuals or families, it is true, that the past year has left without a void; the removal of some dear friend or other, most have had occasion to mourn; and of the mixed cup of life, all of us have been destined to drink. But let the balance of Providential dealings be honestly made, and we will venture to assert, that there are few cases indeed, in which the good does not greatly preponderate over the evil, provided any reasonable degree of care has been exercised to secure it.

Let us now turn for a moment to ourselves, as a country and a people. Let us look to the great sources of our wealth and physical enjoyments—our agriculture, manufactures and commerce—and in each and all, we find abundant reason to be satisfied and thankful for the progress made, and the results obtained, during that period of time which is now past forever. The labours of our hard-working and honest tillers of the soil, have been eminently blessed; in many parts of the Province, the yield of grain, particularly wheat, has been unusually great; and health and plenty have every where smiled. The extent of land cropped with wheat in Upper Canada, in 1849, would probably reach near 700,000 acres, and from the best information we have been able to obtain from reliable sources, we are inclined to put down the general average at twenty bushels per acre; thus giving a total aggregate of about *fourteen millions of bushels!* This, after amply providing for our domestic consumption, will leave some ten millions of bushels to be used in exchange for articles of British and foreign manufactures.

With regard to other agricultural productions—the different grains, such as oats, peas, barley, rye, &c., of live stock, as horses, cattle, and sheep, and the various kinds of roots which are annually gaining an increased field culture in Canada, no one that attended the different agricultural societies of last year, and which are now happily established in every county, and in very many of the townships of Upper Canada, but must feel convinced that these important matters are in a state of healthful progress. The Provincial Show at Niagara, would have done no discredit to many sections that we could name, of the old country; and the Exhibition of the whole Province subsequently held at Montreal, although it laboured under many disadvantages from being hastily got up, was nevertheless such a display of the agricultural and mechanical skill and capabilities of this, not yet half explored and much less than half understood country, as to inspire the breasts of all true patriots with the brightest hopes and most pleasing anticipations of the future of Canada.

Another hopeful sign must have struck an observer at several of the agricultural shows of 1850—that of an increasing number of young stock of the improved breeds. In some sections attention to this important matter is steadily on the increase; and what is also a necessary adjunct, the cultivation of the Swedish turnip, field carrots, mangel wurzel &c., is every year spreading. Our farmers are beginning to understand the intimate and profitable connexion which subsists between the improved breeding and proper keeping of stock, and the results are already apparent in the improved appearance of our butchers' shambles. The Christmas show of meat in the Toronto market the other week, we take upon us to say, both as to quality and quantity, was not exceeded by any of the Provincial towns of the same size in the old country.

We are evidently, then, progressing in those important interests, which it is the peculiar province of this journal to register and promote. It was confessed by several of the American visitors at the late Provincial Exhibition at Niagara, that the grain, sheep, and swine were superior to any thing they had observed in the State of New York; which we accept as the highest possible compliment that can be paid to the farmers of Canada, who may well feel proud of having such an eulogium pronounced by the distinguished citizens of the great and wealthy "Empire State."

We would not, however, have our readers infer from what has been said as to the improved condition of our agriculture, that we have done under the circumstances all that could have been accomplished; much less that little yet remains to be achieved. On the contrary, we believe that the progress, not only of agricultural but of general improvement, has only in right earnestness but just commenced; and that the concluding portion of the nineteenth century, on which we have now entered, will witness results, of the magnitude and benefits of which, we, at present, can form but the faintest conception. In regard to our agriculture, we are just entering upon a more hopeful era. The board that is about being

ganised; the professorship and experimental farm which the University has expressed its intention to establish; and the agricultural information which the Normal School is disseminating through the medium of the teachers which it trains—all these important instrumentalities will combine in modifying and improving the condition of the people, refining their taste, elevating their character, and multiplying the sources of their enjoyments, through all coming time.

The principal defect hitherto in regard to agriculture, has not been so much indifference on the part of the government for a liberal annual grant of money, has been made for several years; but the want of *an effective system of organization among the societies themselves*—a want which the Board of Agriculture will at once supply.

When the real condition and capabilities of Canada become better known in the mother country by the publication of authentic and authorized reports, and the correspondence of the Board with influential parties and societies at home, we shall look for an increasing immigration of a higher class than has hitherto generally obtained. Our fellow-countrymen across the Atlantic may depend it that we have here ample room for all that may come; and they will find in the settled portions of the country, similar provisions for education and the physical and religious wants of man, as they left in their native land. The Provincial University, in particular, will offer very great advantages to youth possessing moderate means, who intend pursuing agriculture, mercantile business, or the learned professions, in this rising and extensive department of the British empire.

We must not, however, close remarks on the progress and prospects of agriculture, without distinctly adverting to other interests, which although subordinate, are yet intimately connected with it, and afford their respective contributions to the common stock of our colonial wealth and prosperity. That the mechanical arts, and more useful kinds of manufacture are making considerable progress in this country, the before mentioned Exhibition afforded very pleasing and convincing proof. We may instance the various articles manufactured in iron, as stoves, machinery, tools and implements of agriculture, woollen articles, as blankets and broadcloths, cabinet work and the various kinds of paper, beside a number of other manufactures, which have only just commenced. We grow and manufacture our own wool; and the blankets made by Mr. Patterson of Dundas, and Mr. Gamble of Etobicoke, are in point of quality, quite equal to any produced in England. Our friends in the old country will have an opportunity of testing, in a small degree, the correctness of our observations at the approaching world's Exhibition. It is pleasing to watch the steady increase of our manufactures, cities, towns, and villages, thereby augmenting a consuming population, within the country itself; an object of primary importance to the agriculturist.

Another pleasant feature of the present, is the perfectly tranquil and prosperous condition of the country, in all its principal relations. Our merchants, during the past year, have done a large and profitable business; our credit abroad is in an improved and satisfactory condition; Canadian securities being sought after and confided in by capitalists; and our revenue—(the most hopeful sign which any country can possess)—is progressively going ahead of the expenditure. As conductors of an Agricultural Journal, we can allude to politics only in a general and incidental manner—never as partisans. But we cannot forbear congratulating our numerous readers, who consist of all parties, on the *healthier tone* of public feeling which now obtains, and which we believe will continue to strengthen, so long as we cherish a love of country, of truth and justice; and observe a spirit of mutual respect—and, when necessary, forbearance—a line of conduct alike inculcated by the dictates of a common humanity, and the teachings of experience, moderation and common sense.

As to the future, it would be unpardonable in us to omit what will in all probability give to the year 1851 its distinctive characteristic in Canada—the actual commencement of that great modern improver and civilizer of nations, the RAILWAY. The public mind is now thoroughly wakened up to the claims and importance of this powerful instrumentality of progress; companies have been formed, contracts taken, and operations in some places have already commenced; so that the time is not very distant, when a grand trunk railway will intersect the whole of British America, from the Atlantic to the far distant west; with branches extending northerly from some of the

cities and towns situated on the main line. That from Toronto to Lake Huron, we learn, is already under contract, and active preparations will be commenced on the first opening of spring. It is impossible to foresee the innumerable benefits which a judicious system of railways, adapted to the wants of British America, will produce; population must rapidly increase, by affording additional inducements and facilities to immigration; the country will become opened up and settled, and the value of all kinds of property materially augmented. From this source alone, then, we may indulge high hopes of the future.

And now it will not be deemed presumptuous, if in conclusion, we ask the public to aid our humble efforts, in the cause of our country's advancement, by lending a helping hand in circulating the *Canadian Agriculturist*. The efficiency of our monthly sheet, must, in great measure, depend upon the degree of support given to it, both as to the amount of subscribers, and the communication of original matter from practical farmers and others. We require *both kinds* of aid. To our patrons of the past year, we tender our grateful acknowledgments; and hope for such an increased support for the present, as will enable us to make the *Agriculturist* a more efficient workman in the wide and important field which it seeks to cultivate. *Farmers, will you not both subscribe and write for your own paper?*

REPORT OF THE SPECIAL COMMITTEE ON THE STATE OF AGRICULTURE IN LOWER CANADA.

(Printed by order of the Legislative Assembly.)

We have received from the Hon. H. Sherwood, M. P., a copy of the above Report; which has been prepared in accordance with a resolution of the Legislative Assembly, passed last session, for the purpose of inquiry into the state of agriculture in Lower Canada, and into the best means of improving it.

This document consists of about 25 pages of the Committee's report, strictly so called, with an Appendix of upwards of one hundred pages, containing communications touching the various points of the inquiry, from several of the most intelligent and experienced farmers and others, in the Lower Province. These letters contain a good deal of interesting information and useful suggestions, and they are evidently written by men practically conversant with the matters which they have taken in hand. We shall probably have something to say hereafter, on some points contained in these communications; but at present must confine ourselves to some of the principal recommendations in the committee's report. There is a very interesting paper at the end of the Appendix, on the climate of Upper and Lower Canada, by Dr. Winder, which we hope to present to our readers entire, in a future number.

We have long had an impression that the agricultural as well as manufacturing capabilities both of Lower Canada and the other eastern Provinces of British America, have been very inadequately appreciated by the public in general; and the perusal of the above report, with those of Professor Johnston on New Brunswick and the Board of Agriculture of Nova Scotia, our previous impressions have been deepened and confirmed. These extensive regions, it is true, are not so generally available for agricultural purposes, as the rich table lands of Upper Canada, (for the peninsula bordered by the three great lakes—Ontario, Erie, and Huron—is undoubtedly one of the finest agricultural districts in the world,) and the winters are both longer and severer than in the Upper Province. But from what we have seen and know of the soil and general geological character of Lower Canada, we form a very favourable estimate of its ag-agricultural capabilities. Even the length and severity of the winters are by no means such awful drawbacks as most old countrymen, and not a few of us Upper Canadians, are apt to think. The climate is peculiarly healthy, and both it and the soil are admirably suited to the growth of the best varieties of the grasses, most of the cereals, and the root crops generally.

We were much pleased with the report which the indefatigable Secretary of the Lower Canada Agricultural Society gave of his visit to our late exhibition at Niagara, and with the candid manner in which he states his impression of the condition of our agriculture in the Upper Province. We are glad to observe that he returned from the observation of our progress and improvements, with a stronger hope and belief, that a similar advancement, may and will be achieved in Lower Canada. This is truly encouraging to one who wishes to take an enlarged view of the progress and capabilities and ultimate

high destiny of these immense regions, under the benignant sway of the British sceptre,—where thousands after thousands of our indigent countrymen, may, for untold ages, continue to come, and partake largely of the necessary comforts and chief blessings of life. In a pursuit of such primordial importance as that of agriculture, forming the very basis of a nation's existence and independence, and daily prosecuted under circumstances the most favourable to health of body and purity of mind; how inspiring and humanising the thought; what a cheering light does it shed on the frequently dark and rugged pathways of life, that our bountiful mother earth, yields up her exhaustless treasures to honest and intelligent industry, equally regardless of race or creed.

The report, after dwelling at some length on the capabilities of Lower Canada, and candidly pointing out the defects both in existing practices of agriculture and the management of societies, proceeds to suggest the means for their improvement. Several of these, it will be seen, are precisely those which we have frequently urged in this journal; some of which are about being carried into practical effect, in Upper Canada, by the formation of a board of agriculture, and the establishment of an agricultural professorship and experimental farm by the Provincial University. The following extracts from the report, will afford the reader a general idea of the principal remedial measures recommended;—

"Your Committee now come to agricultural schools and model farms. It is impossible, without enormous expense, to establish special agricultural schools accompanied by model farms on a large scale. From calculations, the correctness of which is not in the least doubted by your Committee, it appears that each of these model farms would cost not less than £3,500, and they would perhaps be attended only by a few pupils belonging to a class, which, by its position, is the least in want of instruction; it is therefore in the institutions now frequented by our youth that the means must be found of establishing such schools. Your Committee have great pleasure in citing, among other authorities, in support of their opinion, the weighty one of Mr. Johnston, expressed by him in his report of the exploration made by him in New Brunswick.

Happily such institutions exist in Lower Canada, and can compare with more favoured countries; happily we have a class of men in these institutions who can perform great things with little means, who having bid an eternal farewell to all worldly enjoyments except that of doing good, are neither under the necessity nor in a position to require salaries, but devote their whole life to the education of youth, asking in return only food and raiment.

Your Committee therefore suggest, that a special and annual grant be allowed to each of the Colleges of St. Hyacinthe, L'Assomption, Nicolet and St. Anne, on condition that a Chair of Agriculture be established for the instruction of their scholars, and that a portion of land, in the immediate vicinity of each institution, be cultivated as a model farm. Your Committee have not consulted the directors of these different institutions, but do not entertain the slightest doubt as to their inclination, and do not fear to guarantee their good will on this subject. A similar grant might be made for the same purpose in the townships, at one of the Academies where a portion of the youth who speak the English tongue receive their education. Thus with less expense than the establishment of one single separate institution would entail, and with a hundred fold the chances of success, the country would be in possession of five institutions in which the whole of its youth could obtain a knowledge of the noble art of agriculture—a knowledge which hundreds of young men would every year bring into practice on their own account, or impart to their compatriots throughout the country. Your Committee are so fully convinced of the importance of this arrangement, that they fearlessly express their conviction, that this plan alone is destined to advance the progress of agriculture in Lower Canada more fully than it is physically possible to do by any other means. Your Committee, in recommending a certain number of Colleges and one Academy only, have no intention of depreciating the others, but in doing so have only been influenced by the small amount of means which they have to rely upon. The next means of spreading education, a means which your Committee cannot too much recommend, is the publication of an elementary treatise on practical agriculture, to be printed in pamphlet form and distributed gratuitously to all the schools and in the family of every agriculturist.

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Your Committee further suggest that the annual grant allowed to the Lower Canada Agricultural Society be increased and continued to them, on condition that they shall still publish the Agricultural Journal in French and English, and endeavour to increase their library, and keep, as they now do, a seed depot.

Your Committee are of opinion that the appointment of two Superintendents of Agriculture, one for the Districts of Montreal, St. Francis, and the Ottawa; and the other for the Districts of Quebec, Gaspe and Kamouraska, is absolutely necessary. The Superintendent will form the managing part of the system, and together with the Professors of Agriculture in the Colleges, will constitute the teaching body. His duties, as your Committee conceive, would be to make annual tours of inspection in the Districts within his jurisdiction; to publish an annual report, containing as complete a description as possible of the different sorts of soil, their means of improvement; pointing out the defects in their cultivation, and showing the means of remedying these defects; in a word, this report would be the

channel through which the Superintendent would convey to the public the result of his researches and studies.

The Superintendent should place himself in communication with the Provincial Geologist and the Chemist under him, in order to derive every advantage from the information which can be obtained on agricultural industry, from geology and chemistry. He would moreover be one of the directors of all exhibition societies and of the Lower Canada Agricultural Society, and visitor of the agricultural schools in the seminaries and academies.

Such are the means which your Committee think it their duty to recommend to your honorable House, and the whole expense of which do not exceed the amount now appropriated, as your Committee will presently show. If your honorable House should deem meet to increase the sum which is now granted for the encouragement of agriculture, a sum which is certainly small when we take into consideration the immense importance of this branch of public economy, and when we compare it with the sums expended and promised for other branches of industry which are doubtless worthy of attention, but of far less importance than agriculture. If, therefore, your honorable House were disposed to increase the grant by a few hundred pounds, your Committee would then recommend the following: Increase the number of agricultural schools attached to the colleges and academies, and grant, in different parts of Lower Canada, an annual sum of £200 to some good farmer, possessing a good farm and a sufficient number of cattle together with the advantages of an elementary education, on condition of his cultivating his own farm as a model one, under the immediate direction of the Superintendent of his District, and obliging him to show and explain to every visitor the details of his mode of cultivation. This sum of £200 added to the means already in his possession, would enable him to improve his system of cultivation and his breed of animals, and to procure instruments of a superior make, at the same time, that it would allow him to dispose of a portion of his time in explaining the details of his art to his visitors. This is the only means which your Committee can see, to establish at certain distances model farms calculated to meet the views and come within the reach of the generaliiy of farmers who would more likely be discouraged than instructed by farms kept up on an extensive footing and at a heavy expense.

Your Committee thus recapitulate:—the soil and climate of Lower Banada are favorable to agriculture—the people are laborious and intelligent; but they do not, however, derive from the soil more than one-fourth of what it can produce. The cause of this is, that the system of cultivation is bad. The principal defects of this system are: first, the want of an appropriate rotation of crops; secondly, the want or bad application of manures; thirdly, the little care bestowed upon the breeding and keeping of cattle; fourthly, the want of draining in certain places; fifthly, the want of attention given to the meadows, and the production of vegetables for feeding cattle; sixthly, the scarcity of improved agricultural implements.

The means recommended are:—first, County Societies; secondly, the choice of prizes to be granted at the different exhibitions; thirdly, the establishment of agricultural schools and model farms in our colleges and academies; fourthly, the publication of elementary treatises on agriculture; fifthly, the publication of a journal, together with the establishment of a library and a public seed depot; sixthly, the appointment of Superintendents of Agriculture.

Your Committee will now proceed to show how the expenses of this arrangement can be covered by the sum now appropriated, and which amounts to £7,500, distributed as follows:—

For 36 Counties, at £150 each . . .	£5,400
Three Districts, entitled to an annual grant of £500 each	1,500
Annuity to the Lower Canada Agricultural Society, ...	600
	£7,500

Now, your Committee suggest that this sum of £7,500 be distributed in the following manner, in order to meet the expenses necessitated by the various means above suggested for the encouragement and advancement of agriculture:—

For prizes to be granted by the public Exhibition Societies, a sum of . . being about £100 for every 20,000 souls.	£4,000
For five Schools of Agriculture, with Model Farms attached to Colleges and Academies, to be distributed in equal portions	1,500
Premium to the author of the best elementary treatise, and for publishing the treatise in both languages (see Messrs. Lovell & Gibson's letter.) .	600
Annuity to the Lower Canada Agricultural Society, for continuing the publication of a journal, &c.	700
Salary of two Superintendents, including their travelling expenses. . .	700
	£7,500

After the first year, the above mentioned sum of £600 for the printing of an elementary treatise, would for the following years, be applied towards the publication of the annual returns of the Superintendents.

THE UPAS TREE.—Lieut. Blanchard, of the sloop of war *St. Mary*, has brought home with him from Java a living Upas tree.—By his assidious care, it was preserved alive during the long voyage from Batavia; and a few days before the vessel arrived at Norfolk, leaves sprouted out. It has been presented by Lieut. M. to the National Institute and it can be seen in the new conservatory of that institution at Washington.—*Chronicle & News.*

Barriefield, near Kingston, Dec. 1850.

To the President, Vice President, and Directors of the Agricultural Society in the County of

GENTLEMEN,—

In the last Session of the Provincial Parliament the Legislature passed an Act Cap. 73, for the establishment of a Board of Agriculture in this Province, said Board to consist of ten members, three of whom are appointed as by Law set forth in the 2nd and 3rd Sections of said Act. The 4th Section provides the manner of electing the other seven members, viz., the Directors of each County Agricultural Society in Upper Canada, shall at their first regular meeting, next after the annual meeting of the Society, elect seven persons residing in the vicinity of, or at convenient distances from the City of Toronto, &c.,—a return of such Election to be made within one week thereafter to the Provincial Secretary, who shall in the month of June next, after he shall have received six County Lists, cause to be made a full List to be called the "Board List," &c. From these quotations it is evident that the intention and spirit of the Law clearly means, that the election is to be made by the new County Directors that shall be chosen at the annual meeting for 1851. Therefore after the routine business of the past year shall have been gone through at the annual meeting, and the new Directors for the ensuing year chosen, it may then be considered a regular meeting of the new Board; and to save time it is suggested to be perfectly in order amongst other business before the meeting adjourn, that the Directors of the County Society, may then and there, go into the election of members of the Agricultural Board, and to make returns thereof accordingly.

With regard to the names of persons to be elected, "residing in the vicinity of, or at convenient distances from the City of Toronto," it may so happen that Directors of County Agricultural Societies at a distance, have not an opportunity of knowing a sufficient number of fit persons residing in the locality mentioned to fill up the Board.—To remedy this difficulty, the Secretary has been instructed to forward you the names of several gentlemen for your consideration, from whom the number required by Law might be chosen;—of course every County Society have it in their power to select such other persons, residing in that vicinity, as in their judgment may be deemed most advantageous to the Country. This point being settled and a Board of Agriculture once formed, with a Professorship attached thereto; the Institution may hereafter be so moulded and shaped into a system of working, that will prove exceedingly beneficial to the growing community of this fine Province.

The members of the Board of Agriculture will also compose the Council of the Agricultural Association, with power to act in all matters concerning its affairs during the recess of the regular meetings; and the Presidents of the several County Agricultural Societies will hereafter be the Directors of the Agricultural Association of Upper Canada. This augurs well, and opens to the friends of agriculture a broad field of usefulness in carrying forward the prosperity of our Agricultural Association, which has increased in magnitude since its commencement far beyond the most sanguine expectations of its numerous supporters.

The last year's Exhibition at Niagara went off highly satisfactory with all demands liquidated, leaving the Association in a flourishing condition; when the several Societies have paid in the sums promised for 1850 there will be a respectable balance in hand. With this balance, until a permanent grant be made by the Government to the Association, it must depend for its main support on the liberality of the members of the County and Township Societies; and I have full confidence that the annual subscriptions from that source will fully justify the expectations of the Canadian Public; and to prevent any disappointment or difficulty in arranging the Scale of Premiums at the annual meeting, it is recommended that your Society vote their subscriptions to the Association, at the same time when the election of the members of the Agricultural Board is made.

The annual meeting of the Agricultural Association, will be holden in the City of Toronto, on the second Tuesday in June next; and now that we shall have a regular, organised Board of Directors in the Presidents of all the County Societies from every section of the country, we confidentially trust as that season of the year w be very convenient for travelling, that a full t- tendance will be present to give their assistanc e in preparing a higher scale of suitable premiums and transacting other public business connected with holding the next exhibition at Brockville, where it has been voted to take place on the 17th, 18th, and 19th September, 1851.

These national Exhibitions offer a powerful impetus to the progress of agricultural and mechanical improvements; the Provincial Society from its extended means offers higher premiums than County Societies can afford, thereby bringing together the best animals and articles of

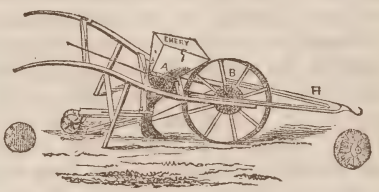
every description; and when the County Societies require to purchase superior animals, they can have there the advantage of selecting from the best the Province can produce. Wherever the annual meetings have hitherto been held, some of the most valuable breeds of Stock, the best and cleanest seeds, together with every kind of newly invented implements of husbandry, have either been purchased at said show, or left as models in the neighborhood.—Therefore, from the situation of Brockville, we may reckon upon our next exhibition being a splendid one, outstripping, even, in magnitude, our last great exhibition at Niagara.

The situation of Brockville, placed on the majestic river St. Lawrence, is most favorable for holding the Exhibition; it can be conveniently approached by land, by more than half dozen of the old Eastern Districts. It is distant from Kingston by water sixty miles, and twelve miles from Prescott and Ogdensburg. Passengers from Quebec and Montreal, (that do not go up the River in Steam Boats) the Eastern Townships and other parts of Lower Canada, can easily proceed hither *via* Lake Champlain and the Ogdensburgh Railroad. This Railroad will also bring Visitors from Boston and the Eastern States of America, as well as from the City of New York, and pleasure parties from distant parts of that State. Hourly steam-boats will convey passengers from Ogdensburgh to Brockville; when in addition to our Industrial Exhibition, an opportunity may be had for examining the romantic scenery of the Thousand Islands, which terminate at Brockville. The many daily steam-boats from Kingston, the Bay of Quinte, and other places, will bring numbers from that direction; while the splendid Lake Steamers of Canada and the United States, that ply upon the great Lakes, will bring full cargoes of passengers from all the Cities, Towns, and Villages on both sides of the Lakes, from Amherstburgh, and Buffalo downward, to the foot of the Thousand Islands. Accommodation ample for visitors can be had at Brockville, Maitland, Presscott and Ogdensburgh, all within one hour's reach of the show ground; so that if we be fortunate in having fine weather, all will go well.

When the business of the Annual Meeting at Toronto, in the month of June next, shall have been accomplished; a meeting will immediately afterwards be convened at Brockvllle, for the purpose of making arrangements for holding the Annual Exhibition.

In conclusion, it should be mentioned that the Ladies' Department at our annual exhibitions, has been, and will always continue to be witnessed with much delight and satisfaction. I therefore take the liberty of requesting that the Directors of your Society, in their several localities, will please solicit the ladies of families in their respective neighbourhoods, to devote at their pleasant fire sides, some part of their winter evenings, in preparing both articles of taste and usefulness. The most trifling and small articles, either ornamental or useful, from the younger branches of families, will be thankfully received and admitted for prizes; and a little of all sorts, will be very acceptable in assisting the Ladies of Brockville, in fitting up the Floral Hall, which will be constructed on a large and capacious scale for the occasion.

I have the honor to be,
Gentlemen,
Your faithful Servant,
J. MARKS,
President of the Agricultural Association of Upper Canada.



SEED SOWERS OR DRILLS.

Among the labor-saving implements says the *Cultivator* which have been introduced into agricultural operations, few are more valuable than seed-sowers. Those which are properly constructed, deposit the seed more perfectly than it is usually done by hand, while at the same time the work is performed five times, and in some instances ten times more rapidly than it can be by the former mode.

The accompanying cut represents "Emery's seed-drill and corn-planter," which is one of the best machines for this purpose that we have seen. It is calculated for sowing all kinds of seeds, from onion and turnip seed to Indian corn. By changing the apparatus for dropping the seed, it can be deposited at distanees varying frem three inches to six feet. It may be used by hand, or by being made of larger size and greater strength, may be drawn by a horse. For gardening purposes it is commonly operated by hand, and for field operations by horse-power. It is in great requisition for planting broomcorn and beans, and is used to a great extent in planting Indian corn. Some of the heaviest crops of the latter

which have been raised in this State for the last two or three years, have been planted by this machine. A man and boy, with a horse, can plant from twelve to fifteen acres in a day. The amount which can be planted in a given time, depends on the width of the rows. The statement in regard to the amount of corn planted in a day, is on the supposition that the rows are three and a half feet apart.

The depth of planting can be regulated at will, by raising or lowering the plough which makes the furrow. For small seeds, a depth of an inch is sufficient. For corn and beans, two inches is the usual depth. Crops planted with this machine, from the regularity of the rows, are cultivated with much ease and at little expense. Price in Rochester, $14.

VILLAGE LECTURES.—No. 2.

The Soil and the Air continued.—A plant is made up of roots, and a stem which carries leaves. It does not live in the soil only—the greater part of it lives in the air. Almost the whole of the plant above ground is covered with pores, little holes in its skin through which it absorbs, sucks in food. Only the *extremities* of the roots have these pores by which they can absorb nourishment. No doubt the roots do take in water from the soil, and along with it they will take in whatever the water has dissolved in it. But then if you examine this water, you will find very little of the matter of wood, or of cheese, or of corn, or of meat, dissolved in it. The water which comes from our drains, and which is such as the roots of plants suck up, is is indeed apparently clear and quite pure, very good water to drink, but none of us would get fat upon it if that were all we had to live upon. Neither, you may depend upon it, will not a tree nor a plant get stouter and greater if that be all that it has to live upon. The soil contains quite as much vegetable matter at the end of a rotation of crops as it does at the beginning; it contains a great deal more vegetable matter after a forest of trres has been grown out of it than it did when the acorns were planted; therefore, all this matter could not have been got out of the lond—the water could not have dissolved all this matter out of the earth and furnished it to the roots of the plants, so that they might suck it up and flourish upon it. No. The great bulk of every plant that grows enters it—not by the roots from the earth, but by the leaves from the air. It is the air and the sunshine and the rain water, not the mineral matter of the soil, that make our trees shoot, our turnips swell, and our wheat and grain crops ripen their seed.

But before entering upon the argument by which I have to prove this, I may as well just refer to the idea which some people have that a plant changes the matter of the soil on which it feeds into its own substance. It cannot do this; it cannot make one thing into another. It must have the right things given to it, or it cannot grow; too much of one thing will not make up for the absence of another. Unless a mason be provided with the wood and the bricks, and the mortar, he cannot build the house; and neithee can a plant build its own structure up unless it be provided with the right things in the right quantity. The mason might have abundance of bricks; but if he had that alone he could not proceed: he could not make everything he wanted out of an abundance of only one of them. They have no power to make one thing into another; they can only make wood of the matter of wood; leaves out of the matter of leaves; seed out of the matter of seed.

It is quite consistent with what is known to say that when the world was created, only sixty or seventy different kinds of particles or atoms, and certain number of each sort were called into being; and though they were together in so many different forms, and though as time passes some of these substances thus formed are continually being taken to pieces, as it were, and decomposed, and others are being built up of the pieces, yet the world is made of just the same number of each kind of particles or atoms; the same number of pieces of each kind now, as it was 6,000 years ago. It is consistent, I say, with what is known, to suppose that not one particle has been created since—not one since been converted into another. Each is as it was when originally called into being, and though not in the same place now, nor united with the same companions now as it was then, yet it is the same particle possessed of the same shape, size, and weight, and endowed with the same properties.

Now, these particles are perfectly distinguishable and perfectly recognisable, but I cannot go through the process just now by which the individuality and proper distinct character and existence of each is proved, therefore you must be content to believe me when I say that the soil contains comparatively few of those particles which go to make the bulk of a tree, or the substance of butter, of cheese, of wheat, or of meat—that it positively contains more of them every year under good farming, notwithstanding that bueter and cheese, and wheat and meat, are every year being sent off it to market, and that, as neither a plant, nor anything else can change one tning into another, the matter of wood, or of

one different agricultural product not being in the soil in sufficient quantity, it cannot come out of the soil in sufficient quantity to form the building material of the trees and plants that grow upon the land. The great bu k of each came not from the soil but the air.

You will see, by.and-by, notwithstanding that it is quite consistent with this statement, that the farmer should cultivate and manure the land to make his plants grow; for, though the soil does not provide the plant with much of its substance, yet provides something which is necessary to it and without which the plant could not live. If the plowing and harrowing and manuring were of no use to the crop, of course, no one would go to any expense in cultivation. If the air provided all the food that plants need, people would not labor at their gardens; they would just sow their seed, and then pray for the wind to blow and the rain to fall, and the sun to shine, till the crop was ripe; then, indeed they might have to wake up for harvest time. But it has been so arranged that plants require our labor both at seedtime and harvest, and all the season through, in order that they may yield their utmost; and thus employment, as well as food, is provided for man.

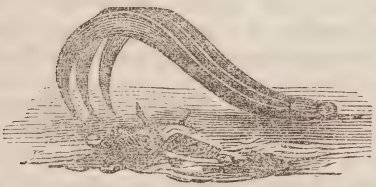
Now let us return to the case of one tree. We have proved that its substance did not come from the soil; for the matter of wood is not in the soil in the quantity enough, and the plant cannot change one thing into another—and as air is the only other thing that the plant has access to, the inference is, that it must get its substance thence. Well, but you will say, "If the wood is not in the soil it certainly is not in the air. There is nothing solid or substantial in air like the matter of wood must be." I think I can prove to you that there is something like the matter of wood in the air nevertheless. Suppose that you cut down a tree, which you say could not have come out of the air, and set fire to it end leave it for a little while—on your return you find that it has gone—that is, it has burned up. Where has it gone to? If it never was in the air before, it is in the air now, for certain; and the clear air into which it has been converted will go to furnish the matter of wood to other trees which are still growing. The tree did not all disappear, however. It left some ashes behind it. Well, the ashes of the tree are what it got from the soil, and they are thus returned to it; and whatever of the tree will burn or rot away back into the air, just goes to the place from whence it originally came.

Plants make their growth by food from the mineral kingdom, which includes the air; and animals by food from the vegetable kingdom; but there is constantly this contemplating process going on, that every plant and every animal that lives, eventually dies, and each gives back to the sources from whence it was obtained, the matter of which it is made. I suppose that all the plants on the surface of the globe now, if weighed, would not be heavier nor lighter than the vegetable covering in which the earth was clothed 5,000 years ago; and I dare say that the quantity of animal matter now in life is not greater nor less than the quantity which lived in any other year since the world was fully peopled. The plants take food from the earth and the air, and grow and feed animals, and these die and return to the dust, furnishing the earthy part back to the soil from whence it came, and the combustible part back to the fair from whence it came. You can imagine a farm which should be a little world by itself—large enough to maintain a family—it should provide the materials for their cottage and food for themselves; and wheat enough should grow upon it, and sheep and cattle, and flax and grass should flourish there; so that woolen cloth and linen and beef and mutton and bread might all be made from it; and thus this family need never leave this bit of land, and it would, as I said, be a little world by itself.

Now the soil furnishes its portion; that is, their ashes, to the grass on which the cows feed—and to the stems of the flax and to the wool of the sheep and to the food of the people; but there is no fear of its being ultimately impoverished by this—for it gets it all back again very soon, for the cattle are killed and the men die—and the plants wither and the ashes of all are returned to the land whence they came—and the fuel is burned, the dung-hill rots away in the ground, and thus all the part which was obtained from the air is returned also to it. There is no difficulty now in conceiving of such a farm as this yielding so many tons of cheese or so many bushels of wheat every year without suffering. We know that this did not all come out of the soil, so as for us to be obliged to believe that there are hundreds of tons of cheese or of wood or of wheat all in the soil now to furnish future crops; and we know that it did not all come from there, so as for us to be obliged to believe that there is the matter of all the crops that shall be harvested, and all the crops that shall be cut to the end of time, now existing in the air ready to be used year by year as time passes. What we know now is this—that every year the soil contributes what may be called the mineral part of our crops—their ashes, in fact, if they were burned—and

little else; and the air contibutes almost all of the woody part of them—what would disappear if they were burned; and each in the course of a very few years receives back again to itself whatever each had given, ready to be used over again to make new crops and new produce—new food to feed another race of men.

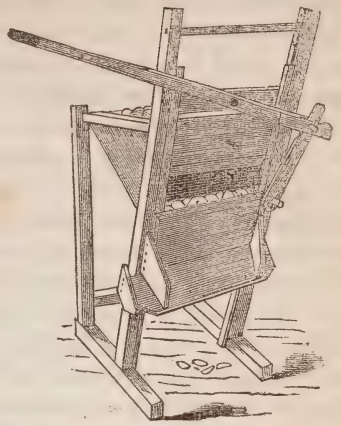
In the case of the farm that yielded the five tons of cheese every year—it does not lose five tons of the cheesy part of the soil annually; the soil has no cheesy part to lose—all that it loses is just such a quantity of earth as the ashes of these five tons of cheese would amount to if they were burned? A very few pounds—and that is all the farm loses every year. Certainly it is not the common sand of the soil that exists in the cheese, but it is a part of the earth of the soil that is sent off with the cheese, nevertheless; a very small portion, however, and one which the soil could lose every year for a very long time indeed without being any the worse for it. I burned a ten-pound mangold wurtzel the other day, and here are all that remains of it; these ashes weigh about an ounce, all the rest of this root comes from the air, and it has all gone back to the air from which it came.



ROOT PULLER.

The above is a most useful implement in pulling out roots, stones and old stumps that a chain cannot easily be hitched to. It is made of strong pieces of iron welded together as seen in the cut. We have not as yet seen the article in our hardware shops, though much used in the northern States. A common blacksmith may construct it with the aid of the above cut, and we are satisfied that in many cases the *new* land farmer will find it exceedingly useful.

A Hint to Beginners.—The opening of the new year is a good time to "turn over a new leaf," and we would advise every housekeeper, young lady, clerk, apprentice, journeyman, student &c., to procure a little blank book, and keep an accurate account of their income and expenses during the coming year. It will prevent many little mistakes, assist you in forming methodical habits, and will often check a tendency of extravagance in the disbursement of your funds.



TURNIP SLICER.

Various are the machines used for this purpose. Perhaps the above which any ingenious farmer can make for himself is as good as any. The cutting part consists of a wooden frame moving in grooves to which a piece of an old scythe is attached. This is moved up and down by a handle as seen in the cut. Indeed the cut is sufficiently plain to show the construction of the entire machine. Such a machine will be found very convenient at this season of the year in preparing roots for cattle.

STATE OF FARMING AND FARMERS IN ENGLAND—EMIGRATION TO CANADA.

For the Canadian Agriculturist.

Brantford, C. W., Dec., 1850.

Sir:

In your November number you addressed some questions to me for information on various topics connected with the progress, present state of improvement, and general prospects of agriculture in England, and the comparative positions of the English and Canadian farmers, naturally inferring that the numerous facts bearing on the subjects referred to, would be peculiarly interesting to any practical man of common observation, after an absence of fourteen years.

To go into details on all the above subjects would trespass largely on your columns, but I embrace the first leisure to transmit a brief outline.

The introduction of the various new manures, since I left England, has enabled those few farmers who can afford the expense, to assume the appearance of extraordinary fertility on their farms; but this is very partial, and in the great majority there is no material improvement in good farming as practised in the best districts fourteen years ago. There has, however, been a great change in public opinion in the south respecting sheep stock; the high bred southdowns being now superseded by what are called the *Hampshire Downs;*—sheep of the same variety, but of greater weight of carcase and fleece, and having the advantage in early maturity, superior hardihood and better nurses. The sale of a large flock, a choice breed of this kind near Salisbury, lately brought prices not exceeded during the last war, and altho' the frequent and large importations of fat stock from Europe, the flockmaster, the grazier, and dairy-farmer, have suffered much less than farmers in the grain districts, especially on lands of heavy tillage. In these sections more especially has the operation of free trade paralysed the farmer's energies; instead of a diminution of burdens, ever numerous and heavy, in many cases they are positively increased, as in the case of tithes now commuted for money payment, but which is regarded as an improvement for the benefit of the clergy *only*. In vain was it urged by free traders at large protectionist meetings, that the ancient Statute set apart tithes for the threefold purpose of "Support for the Clergy," "Support of the Poor" "and to sustain the fabrick of the Church," but in general the clergy join the protectionist party. It is indeed fearful to contemplate the result of the two great parties (Free Trade and Protectionist,) now fiercely carried on and agitating the country, often causing bloodshed and bitter animosity; but the opinion prevailed that concessions to the agricultural class were intended, by remitting taxes which bear exclusively on them, and also that a duty would be levied on American flour, as a *manufactured* article, leaving wheat free as at present. A measure of this kind would give stability to the colonies and be well received after the refusal of the United States to come to any fair arrangement of reciprocal trade.

With regard to the great question of free trade and the political affairs affected by it, it is now evident to any unprejudiced observer, that it would, at this time, be impossible to return to the old system, or any general protection, and as a consequence of this position and prospect of low prices and high taxes, numerous and earnest were the enquiries with a view of emigration to Canada. After using my best exertions in endeavouring to promote the great object of my mission, I considered it a benevolent duty to take a tour through the counties of Hants, Wilts, and Dorset, amongst numerous old acquaintances, with a view of giving practical information on the subject of emigration to Canada and the success to be expected by suitable persons, and as a consequence a great many respectable persons have already arrived and many others are winding up their concerns with the same views, and doubtless will become good settlers, chiefly as agriculturists, besides two or three gentlemen of independent fortune for the benefit of their families. The public statements of my own experience, matured by fourteen years residence, were considered satisfactory, and will show that Canada has the balance of advantages, compared with the United States.

After what has been stated it may be superfluous to say much on your question, as to the "Comparative advantages of Canada and England," I may however mention that in making the tour before alluded to I found many instances of injustice, by farmers having had their crops destroyed by the landlord's game, and worthy men and their families thus brought to premature poverty; no adequate compensation being allowed for damages. Other cases of injustice in men being turned out of their farms far voting conscientiously, and others for being Presbyterians.!! This may scarcely be believed at this date; but the fact is well substantiated in a descendant of the Irish Prelacy, a mushroom Lord in Hampshire, also a notorious game-preserver; this man having turned out an industrious Presbyterian tenant, stated publicly that no Presbyterian should again occupy a farm of his. It is indeed a fact to be regretted that many of the aristocracy act on this principle, but few have the folly to confess or avow it. In conclusion, on a review of my journey I am very glad that I have undertaken it, because it has supplied facts on which to found a correct judgment, and I can assure you, Mr. Editor, that I returned to my adopted country and prospects with feelings of matured satisfaction and delight, and hope to be further instrumental in bringing out many who will become worthy settlers.

I remain, Sir,

Your obedient servant,

HENRY MOYLE.

[We are obliged to our respected correspondent for his communication, and hope that he will furnish us hereafter with more details. The difficulties of the British Farmer must now be felt almost overwhelming, and we are persuaded that no other agriculturists in the world possess sufficient energy and skill to bear up under them. The recent fiscal changes involved in the free importation of grain, &c., produced almost immediately a reduction in the price of all agricultural products of at least 25 per cent.; with the prospect of a yet greater diminution, that is likely to be permanent. It is impossible for the farmer long to endure this state of things, without a corresponding reduction in his general expenditure, including rent, taxes, tithes, labor, and tradesmen's charges. But thousands will be ruined before these changes take place. Some of the large landlords it is true have already made considerable abatement in their rents; but taking the farmers as a body, their fiscal and other pecuniary burdens are in 1851, pretty much what they were in 1847–8, when the price of agricultural produce was at least 25 or 30 per cent. more than it is at present. Tithes were commuted into a permanent money charge upon the land, under much higher prices than now, or are ever likely again to obtain; long leases were taken and large pecuniary engagements were entered into, under a scale of prices that has been subsequently so much reduced by legislation. Old Cobbett, were he living, would call out for *an equitable adjustment*, both of public burdens and private engagements; and we shall see whether something of the sort will not have to be resorted to ere long, in order to save the majority of British landowners, as well as farmers, from irretrievable ruin. The greater portion of the Hop growers, we see, have not yet paid the remaining moiety of the Hop duty for 1848. What would the Hop growers of America say if government were to impose a tax of $5 per cwt. weight, charged upon the article as soon as it is prepared, and which must be paid, at whatever price it be sold for. Hops, we believe, are generally as high in Canada, as in England; in the latter, however, the duty usually amounts to 25 per cent. of the market value, and sometimes to even 50 per cent.! No wonder then that Hop growers are in a state of distress!

Both the agricultural and manufacturing interests of England imperatively require the largest possible reduction of all fiscal burdens, which can only be effected by adopting throughout all departments of the State, *the utmost practicable economy*. While we advocate the policy of diminishing, as much as possible, the weight of taxation on the springs of a nation's industry; we think it to be the duty of England, in her peculiar condition, to impose moderate duties for *revenue*, rather than for protection, upon all articles of foreign production; and we can see no reason why wheat, or grain of any description, should be differently treated from flour. The fact is that all the *cultivated* productions of the earth, are in the strict and commercial sense of the word, *manufactured articles;* they are the results of capital and labor, aided by implements or machines. And it would be just as politic and legitimate to tax a bushel of wheat, as it would be a barrel of flour.

Our correspondent alludes to the oppressive and injurious effects of game-preserving upon some of the English farmers, a practice by the bye which we believe is now being kept more within proper bounds than formerly, and on many estates the preservation of game has been wholly abandoned. The instance adduced of the exercise of arbitrary power on the ground of religious opinions, we hope and believe to be simply incidental. We have known ourselves, a few similar cases, not confined to one church. The fact is the abuse of power, or in other words oppression, is a tendency of man's nature, not confined to any one form of government, to any peculiar phase or condition of society; nor is it bounded by parallels of latitude or lines of longitude. Its only sure antidote, in the individual, is the quickening and elevating of the moral sense; in society at large, the constraining power must be sought in the universal diffusion of sound knowledge, and the progress of a true Christian civilization. We believe that the landowners of England, as a class, are no more disposed to acts of tyranny or oppression than other men, possess-

ing the same means and influence. If we may speak on this matter from some experience and observation, we are compelled to say, that if a person desires a farm of moderate rent, where his holding may be secure by the ties of a moral and social bond, as well as profit, with the almost certainty of its descending to his posterity; he would not be nearly so likely to secure his object by hiring under a small landlord; or one who may have amassed vast wealth in trade, and invested a portion of it in land for the mere purpose of profit, as he would be by becoming a tenant of some great aristocratic landowner; a real old English Gentleman or Nobleman, who inherits a character as well as a title—a heart as well as an estate, both gentlemanly and noble, from a long line of chivalrous ancestors. If we are ever destined, on this side of the Atlantic, to have an aristocracy, may Heaven favor us with one of character and rank, rather than of mere wealth. Of the latter, however, there are already signs of danger in this western hemisphere.—"The love of money—as money—that is for mere social distinction or worldly pleasure, is the root of all evil."

We shall be most happy to find that our correspondent's visit to dear old Fatherland, has been the means of drawing attention of the right sort of people, such as possess character, industry and resources, great or small, to the wants and capabilities of this important section of Her Majesty's empire. Here, thousands that are struggling for a bare maintenance at home, might by the exercise of industry and frugality find comfort and plenty, make a suitable provision for the favorable settlement of their families; become quite as independent as the necessary conditions of human life can possibly admit; and, as to liberty, in the highest and widest sense of the term, why, we have more of it in Canada, than many people properly use.

We beg our respected correspondent not to regard these remarks as strictures on any thing that he has advanced, for such they are certainly not intended. The perusal of his interesting letter, awakened up in our mind, a train of reflection, which we have endeavored very briefly to express.]—Editor.

FARM MANAGEMENT.

For the Canadian Agriculturist.

Waterloo, Dec. 16th, 1850.

Mr. Editor:

Sir,—Inclosed you will find two dollars, one for a Bound Volume of the Agriculturist which I received from your agent, and the other for the payment of the next year's Volume, which you will please forward as usual.

You will also oblige me by giving in your paper an answer to the following enquiries. I own a small farm of about thirty acres, and I have ploughed the whole of it this fall, with the intention of summer fallowing about one half, but if I do so I shall be short of feed for next winter. Now I want to know if I can't put in some sort of summer crop that will answer the double purpose of tilling the ground, as good as summer fallowing, and also give a crop that will be useful for feed. You will also state what kind of a crop will be best to cultivate for that purpose, and also the best method of cultivating it. I want to get into a method of cultivating my farm in rotation. I should like to know the best plan for that purpose. Our neighbours in Dumfries have got into a plan of ploughing their land deep in the fall, which is intended for summer fallow, and working it alternately with the cultivator and the harrow the following summer, and not ploughing any more at all, which they say effectually kills the spear grass on the surface, and rots it below the surface, so that they get rid of that nuisance. I should like to know your opinion on the subject as I have only got it by hearsay, yet it seems very likely to effect the object. If you think the plan good it would be proper to follow it here as our Township is full of it, and our method of working does not destroy it. In conclusion, Mr. Editor, I beg leave to submit the above to your consideration, and wishing your paper the success it justly merits, I remain yours most respectfully,

John Johnson.

Waterloo, near Preston.

[We recommend our correspondent to seed down a portion of his farm as soon as possible. Sow liberally timothy and clover on a good tilth, after the land has been well cleaned. Many people make a great mistake is sowing too small a quantity of grass seeds per acre, thereby precluding a heavy crop of hay, and a thick enduring pasture. Having the whole of the farm under the plough, at the same time, cannot be profitable management; there must be something

peculiar in our correspondent's case, which he has not stated. Incessantly cropping land with grain, without an annual return of rich and varied manure, will be sure, in the long run, to exhaust and render worthless the richest soils.

To avoid so much naked fallow and to increase the amount of winter provender for stock, we recommend our correspondent to put in some half dozen acres with Swedish turnips, mangel-wurtzel, potatoes, and the Belgian white carrot. If the soil be heavy, parsnips are well suited, and they are excellent food for cattle, particularly milch cows. All these crops should be sown in drills, sufficiently wide apart to admit of the horse-hoe or cultivator;—an implement of small cost and which no farmer, however small his holding, ought to be without. The success of root culture depends greatly upon *the frequent stirring of the soil during the period of growth:* and if the land is not too weedy to begin with, it answers most of the purposes of a naked fallow.—It is, however, of importance to remark, that root culture can never be successfully carried on upon exhausted arable land, without a liberal dressing of manure, which, if farm-yard dung, should be deeply ploughed in, the previous fall.

The system of ploughing alluded to by our correspondent in Dumfries, we dare say is a good one. Will no farmer in that well cultivated township furnish us with particulars and authorative results? There are some soils, possessing such fine and adhesive particles, that have a strong tendency *to run together*, as it is commonly termed, after they have been thoroughly disintergrated by the plough in the fall. Such soils in the spring commonly require deeply ploughing again; we have seen no cultivators on this continent at all adequate to the purpose. In England, such as Earl Ducie's or Finlayson's, require the draught of four or five strong horses, in order to work from 12 to 18 inches deep. As to weeds in general, the only effectual way of getting quit of them is to destroy both root and branch, *by thorough cultivation*. When land is once got perfectly clean—a judicious system of rotation and manuring, with good culture, will not fail to keep it so; and at the same time keep up, or rather improve its productive powers. And this should be the object of every farmer, who desires in the long run, both profit and fame.]—EDITOR.

IMPORTANCE OF AGRICULTURE.

Agriculture has been aptly styled "the nursing mother of all the arts." It is the basis, the soul of our national prosperity. Commerce and manufactures conduce, in a great measure, to wealth; but the cultivation of the soil ever has been, and ever will continue to be, the fountain-head of all the streams of a country's resources.

There can be no strength in a state, and no moral health among the people, when the tillage of the land is neglected. We can date the decay of power and virtue of many nations from the decline of their agricultural industry. In Rome, for instance, when the wise policy of fostering agriculture was pursued, a heathful spirit pervaded the whole state. Then the laws were impartially administered, and justice done to all. Then labor was accounted honorable, and statesmen, and generals, and philosophers cultitivated their farms with their own hands. It was thne among the tillers of the soil arose a Regulus, a Cincinnatus, and an invincible soldiery. It was then that the "seven-hilled city" breathed defiance to her enemies, and caused nation after nation to yield to the resistless power of her legions, until the Roman eagle waved over the known world. But when largessess of corn were bestowed upon an idle populace, when agriculture was neglected, and war laid waset the fertile fields of Italy, then Roman virtue and Roman vigor fled. Soon intrigue, vice, and venality took firm hold in the state, until finally the "pale mother of empires" was abandoned to her enemies, and the palaces of the Cæsars echoed the tread of the victorious barbarian. History abounds in examples illustrative of the important fact, that the enduring greatness of a nation is mainly founded upon its agriculture, and rulers will do well to increase the prosperity of those who swing the scythe and hold the plough.

That country that does not possess within itself the means of affording subsistence to inhabitants, is, if we may trust the voice of experience, destined to sink to early ruin. National power based upon commerce alone, unsupported by a flourishing industry, which ministers to human wants and gratifications, must fall to the ground. Merely commercial states dependent upon contingencies for their very life-blood, and imbued with the spirit of speculation which tend to enervate the body and corrupt the mind, contain within their own bosoms the seeds of dissolution. Phœnica, Carthage, Genoa, Venice, and Holland of the sixteenth and seventeenth centuries, all bear witness to this fact. There is much truth in the verses of the poet Goldsmith.:—

"Trade's proud empire hastes to swift decay,
As ocean sweeps the labored mole away;

While self-dependent power can time defy,
As rocks resist the billows and the sky."

To her unsurpassed agriculture England is most indebted for her support in the midst of those tremendous pressures which so often have threatened to crush her. It is the unparalled cultivation of her soil that has enabled the British people, placed upon a rockbound island, to excel the world in every article of fabric, to maintain an unrivalled navy, and plant their power in every quarter of the globe. Firm are the foundations of the strength of that nation, which in time of peace is nourished from the resources of its own industry, and in war can rely upon the strong arms and undaunted hearts of its yeomanry, to sustain its rights in the din of strife or in the loud roar of battle!

Upon agriculture, in addition to the necessaries and common comforts of life, depends the success of every other employment. It is agriculture that builds up our crowded cities, covers our fields with yellow grain, and diffuses life and vigor throughout the land.—It is agriculture that supports our gigantic manufactories, ringing from their basement to their attic with the music of free labor, and causes our ten thousand ships to dance upon every rolling billow, and spread their sales to every propitious gale. Says Lord Erskine, in his poltical romance called Armata, "You might as well hope to see the human body in active motion when palsy had reached the heart, or a tree flourishing after its roots were decayed, as expect to see manufactures, or arts, or industry of any description, progressive, when agriculture has declined." Paralyze it, and you weaken the pulse of enterprise, stiffen the fingers of machinery, and clip the wings of commerce. Destroy it, and you bury in one common grave national power and individual prosperity.—*Marin's Address in Sinonian.*

AGRICULTURAL BUREAU IN THE UNITED STATES.

In surveying the various interests of the country, no one can fail to observe how little has been done by Government to promote the cause of agriculture. It is true the cultivator of the soil, in common with all other classes of society, enjoys the protection of the laws, and the blessings incident to good government. But something more seems to be due to a branch of industry which employs more than half our population, and, to a great extent, sustains the other.

The power of the general government over that subject is limited, but this furnishes no good reason why it should not be exercised so far as it does legitimately extend.

The ordinary means adopted to afford protection to the manufacturing and commercial interests are comparatively inoperative in regard to the agricultural. A tariff can do but little, directly, to benefit the farmer or the planter. The staple productions of the South are peculiar to that climate, and, therefore, are in no danger of competition from abroad. Those of the North and West, in consequence of the soil, and the low prices at which land can be bought, are produced at less cost there than in other countries, and consequently except under extraordinary contingencies, need no protection by imposts on the breadstuffs of foreign nations.

But still much may be done by government, at a small cost, to promote the interests of agriculture. The science is yet in its infancy, and great minds are now directed to the study and developement of its true principles. Experiments are in progress to ascertain the qualities off different soils; the comparative nutritive properties of different animal and vegetable productions: and the utility and efficiency of various manures in fertilizing and renovating the exhausted lands of the old States.

Encouragement may be afforded to enterprises like these, and facilities furnished for the collection of seeds, plants, and vegetables from all parts of the earth, and their distribution throughout the country.

Premiums may be offered for the best practical treatises on the different branches of husbandry, which can be published and sent abroad among the people. By means of these, a spirit of philosophic inquiry may be stimulated, and a great impulse given to the interests of agriculture. Much has already been done in this respect, through the agency of the Patent Office; but the subject is too important to be left in this dependant condition.

The last report from the department recommended the establishment of an Agricultural Bureau, to afford to this great branch of American industry the encouragement which it so well deserves. This is no novel suggestion. It had the sanction of Washington, who, in his last annual message, referring to the propriety of creating an agriculture board, said: "This species of establishment contributes doubly to the increase of improvement, by stimulating to enterprise and experiment, and by drawing to a common centre the results, everywhere, of individual skill and observation, and spreading them thence over the whole nation. Experience accordingly has shown that they are very cheap instruments of immense national benefit."

I therefore renew the recommendation of my predecessor for the establishment of a separate bureau, to be entrusted with the duty of promoting the agricultural interests of the country. The vast extent and rapid developement of the mineral resources of the country seem to require that adequate provision should also be made by law for the collection and analysis of the various mineral substances which have been, or may be discovered so that their properties may be understood, and their value correctly appreciated.

The purchase of a farm in the vicinity of the national metropolis, to be tilled and managed under the direction of the bureau, has been suggested as an important auxiliary in illustrating the best modes of culture. If this idea should be favourably received, I would respectfully add that Mount Vernon, whose soil was once tilled by the hands, and is now consecrated by the dust of the Father of his Country, should properly belong to the nation, and might, with great propriety, become, under its auspices, a model farm to illustrate the progress of that pursuit to which he was so much devoted. *Extract from Secretary of States Report.*

Two interesting agricultural productions have just been introduced into France from the Equador by M. Bourcier, formerly consul general of France in that country. The one is the red and yellow *hocus*, which is of the form of a long pota'o, and has the taste of a chesnut; the other is the *milloco*, which has the taste and form of our best potatoes. These two productions, which are found in great abundance in the neighbourhood of Quito, grow rapidly in the poorest land,

They have been sent to the Jardindes Plantes, where no specimen of the kind has been before seen.

MECHANICS' INSTITUTE.

(From the Patriot.)

On Friday sennight, a lecture on "The Relation of Science to Modern Agriculture," was delivered by George Buckland, Esq., Editor of the *Canadian Agriculturist*, and Secretary of the Provincial Society.

The lecturer remarked, that in writing or speaking on the subject of Agriculture, it is usual to descant on its antiquity and importance.—Notwithstanding both, however, it seemed to him that this art derived less aid from the pursuit of physical science than any other of the useful arts of life. Many of the ancient nations understood as well, and practised as thoroughly, the practical principles of agriculture, 2, or 3,000 years ago, as many of the European nations did not more than two centuries since; nay, as well as they were understood at the present time in many parts of Europe and in a large portion of the continent of America. Within the last half century, the art had made a very rapid advance, particularly in Britain, and was now assuming a position to which it had hitherto been a stranger. Its generally slow progress was attributable to many causes. It was partly accounted for by the great diversity of climate in the world, each involving some peculiarity in the practice of Agriculture. The ancient cultivators of Egypt, or of Sicily, however skilful in their own countries, would have altogether failed if transported to the widely different climate of France or England. The same observation applied to the difference in the nature of the soil observable even in the same country. The Scotch deservedly held a high place as cultivators of the soil, yet there were numberless instances on record of failure by the most skilful Scotchmen when transported to the different soil which was found in several parts of England.—The experience of men in different climates and on different soils had rendered it difficult to form a regular systematic codification of results. But as the science of agriculture became better understood, these circumstances would be converted from obstacles into advantages, well calculated to subserve its interests and promote its improvement. Another obstacle was connected with the mode of life inseparable from agriculture. A farmer's life must always, to a greater or less extent, be an isolated one. The marvellous progress of manufacturing skill and industry was doubtless in a great measure attributable to the quickened intellect and unremitting enterprise which residence amongst masses of men was certain to produce. Of this advantage the farmer was deprived. Again: very much in agriculture depended on experiments which involved a large extent of time. The most rapid experiment required a year to develop its success or failure; and those experiments which were connected with the different methods of rotation in cropping required a much longer period. The co-operative principle furnished the only method of overcoming this difficulty. Numbers by associating and publishing the results of their different modes of practice, would speedily furnish such an accumulation of facts, that the scientific man would be able to generalise and to deduce some great principles. This process was going on in Great Britain and in some parts of America, and furnish solid grounds of hope for the future. Another encouraging fact was the intimate connection which must henceforward subsist between agriculture and other sciences. The labors of the geologist and chemist would be of essential service to the farmer: the mechanician would assist him in other departments of labour; and the spread of railroads and other improved modes of transit and communication would produce a great agricultural as well as a great social change.—The lecturer proceeded to epitomise the history of agricultural improvement in England and Scotland. He characterised the introduction of the turnip culture in the Lothians, in 1723, as the beginning of the great change which was still going on. Root culture and the culture of artificial grasses, soon afterwards extended to England, and led to the rearing and fattening of large quantities of stock and to the improvement of their breeds; more manure was obtained, and in turn served to augment the grain crops; alternate systems of cropping to a great extent superseded naked fallows; while beneficial changes were all the time going on, first in the implements employed, and next in the mechanical texture of the soil by means of under draining and manuring.—Many of these improvements were yet little known in Canada or in the neighbouring States. Rotation of crops could hardly be said to exist here; but our farmers must be resort to it if they hope to cultivate their farms with profit. In Canada and New York the wheat crop averages only about fourteen bushels per acre; the average used to be larger, but it was gradually becoming less and it would continue to decline unless more scientific culture than now prevails be adopted. The only farming that could permanently pay, here or elsewhere, was high farming. Men tilling the soil must use their brains as well as their hands; for as Cobbett had remarked, "the soil though ever grateful, must have something to be grateful for." The education of the farmer, while adding to the profitableness of his labor, would tend more than anything else to secure to him the respect to which his true social position entitled him.

Coal and Wood Ashes.—A writer in the North-British *Agriculturist*, contends that coal ashes rank very low as a chemical meliorator of earth and soils. Wood ashes, according to Liebig are of far more value. We agree with the author and the chemist in their estimate of the value of coal and wood ashes, and so will our friends beyond the Atlantic, where there is more wood to spare for making ashes than on this side of the water. Soot is more favorably reported of; an analysis of it is given, and a report of the results as a Manure, in raising potatoes, appears favorable. Soot is one of those manures which acts rapidly on vegetables; but it seems of too volatile a nature to last long as a manure in the soil. From our own experience, we would say that at the rate of 25 to 30 bushels of soot an acre, as good a return of potatoes might be obtained, where the soil was not in an exhausted state, as with from 15 to 20 tons of farm yard manure. Green broom tops, as we have formerly stated, we have found to be much superior to either in raising potatoes.

RAISING GEESE.

A goose is more easily raised than any other domestic bird of our experience. Here is the simple course we pursue: Feed the geese kept for breeders, moderately well all winter with a mixture of grain and boiled roots. Provide a warm, dry, well-sheltered place for sitting; and when the goose is on her nest, give her regular daily food, principally of cooked vegetables, lest she should get costive, and plenty of fresh, clean water. When sitting, a goose does not eat so much as ordinarily. If she inclines to come off the nest let her do so; and even let her go to the water and swim and dive to her heart's content. She is only

taking a necessary ablution; and as to the idea thas she will get wet and chill the eggs on her return, it is all nonsense. Who ever saw moisture adhere to the feathers of a well-fed, healthy goose.

After the goslings are hatched, let them run with the goose on the grass, but be careful that they are not exposed to wet, the first week of their existence; after that, there is little danger, unless the rain be particularly cold and enduring. With a small allowance of boiled vegetables, mush, or oats, the flock will do well the first fortnight; after that, they will subsist almost entirely on grass and in the water. In the fall, feed well with boiled vegetables and grain, and they will soon be sufficiently fattened for the market.

In order to guard against rats, minks, weasels, and other vermin, the goslings should be penned every night, till nearly half-grown, within a tight board or iron-wire fence, (the latter is much the best) about three feet high. Be particularly careful there is no hole in nor under the fence, that a rat or weasel can crawl through; and the fence must be so constructed that they cannot climb over it.

General Science and Miscellany.

Ventilation of School Houses.

Much has been said and written of late years on the proper construction and ventilation of school-houses, and it would seem that there could be no lack of information on this subject, yet many of the more modern structures, where children receive the first rudiments of knowledge, are built with an apparently perfect contempt of health, convenience, and comfort. It is true that they have a handsomer external and internal appearance than the rude log hut, with the fissures between the logs gaping wide—its slab seats—its huge three fathom fire-place and mud chimney, but if health is at all valuable the latter is much to be preferred to the former—for the simple reason that in the one we have the air of heaven, fresh and abundant, in the other the atmosphere is poisoned by frequent imubulations.

A school house, chaste in design and finish—surrounded with spacious play grounds which are adorned with trees, shrubbery and flowers, is beautiful to look upon. It is suggestive of pleasing thoughts and associations. It is an evidence of taste and thrift in the community, and of social and intellectual progress: but if, with improvements in appearance and design, we cannot secure proper ventilation, it would be far better to fall back to the rude log cabin, with all its unsightliness. Our Creator has surrounded our earth with an ocean of air to the depth of forty miles, and is a necessity of our physical well being, that we should have a free, all and constant supply, without it we wither, droop and die. The air is composed mainly of oxygen and nitrogen, in proportion of one of the former to four of the latter. Oxygen is the supporter of life and combustion—nitrogen is destructive of both. Any process, therefore, which deprives the air of its oxygen, renders it unfit for respiration, and destructive of health.

Breathing is such a process. At every respiration the air is deprived of a portion of oxygen, and its place is supplied with carbonic acid gas, generated in the lungs. This gas is well known to be as fatal in its effects, when pure, as the simoon of the desert. It is the same gas which is found in pits and the bottom of wells and has so often proved fatal to life. It is generated abundantly in the combustion of charcoal, and is especially dangerous in a close room. Taken into the lungs in small quantities it produces headache, dizziness and fainting—in large quantities stupor and death. There is, then, a process constantly going on, by which the air is deprived of its life giving elements, and its place suppled with a deadly poison. It is true that nature has provided a remedy for this evil, but none which will effect a close ill-ventilated room.

Every school boy has read of the Black Hole in Calcutta—a room 18 feet sqnare—in which 125 human beings out 146 were in one night consigned to a miserable death, solely from breathing repeatedly the same atmosphere. "This terrible example" says Dr. Comb, "ought not to be lost upon us, and, if results so appalling arose from the extreme corruption of the air, results less obvious and sudden, but not less certain may be expected from every degree of impurity."

It is, therefore, cruel to crowd a large number of children together in a small room, as is frequently done, close every door and window, compel the little sufferers to breathe, again and again the same impure air.

The construction of school houses is sometimes such that even with all the windows open, and a breeze blowing from the cardinal points of the compass, the victims of education and advanced civilization, can only snuff the air afar off. I have in my eye such a house, and there are hundreds such. Here is the picture—look at it. The house is about 16 by 18 feet, and destined for 30 or 40 scholars; a door in one end; two small square windows on each side, as near as possible to the ceiling: the window sills five or six feet from the floor; the ceiling ten feet high. Now let the windows be opened, and the air blow in all its freshness and purity through the upper part of the room, the poor panting victims below may sigh in vain for a breath of the invigorating element. This may be endurable in summer, when a perfect ventilation may be obtained but in winter when every crack and crevice must be closed, to exclude the cold air, who can compute the ravages made on the young constitution, embittering future life and consigning it to a premature grave?

It is computed by scientific and accurate chemists; that every person destroys four cubic feet of air per minute, so as to render it unfit for respiration. Suppose now that 40 scholars be assembled in this house, they will require 160 feet of air every minute, or 9,600 every hour, and the air will be poisoned so as to be unfit to be received into the lungs every 18 minutes. But no provision being made to renew this vitiated atmosphere, it is inhaled again and again, sowing the seeds of disease and death. Such houses as this are repetitions of the Black Hole on a limited scale, less speedy in their results, but not less certain and fatal.

Is it a wonder that headaches and fainting are common in such houses? or that the scholars are dull listless, and inattentive? In addition to the causes enumerated of vitiated atmosphere, may be mentioned the vapor breathed from the lungs and the matter thrown off from the body by insensible perspiration. It might be supposed that carbonic acid gas, having a specific gravity of 1.5, air being 1, would fall to the floor and such is the fact when it is cooled, but being heated in a warm room, it is readily diffused through the atmosphere, and the inmates begin at once to inhale the poison. A volume might be written on this subject. Statistics have been collected by scientific men which are perfectly appalling, but there is not space neither is it necessary to repeat them here. Let every parent, whose eye shall meet this article, visit the school room in his neighborhood, when, during the winter months, it is almost crowded to suffocation, and the air is heated and scorched by a stove; let him remain for a day and

breathe the foul atmosphere, and he will feel in his own person the truth of what has been said.

This subject commends itself to the earnest attention of every parent. School houses have and can be constructed in harmony with good taste and the laws of health. So that physical well being need not be sacrificed in the acquisition of knowledge.

FRESH AIR.

Man acts strangely. Although a current of fresh air is the very life of his lungs, he seems indefatigable in the exercise of his inventive powers to deprive himself of this heavenly blessing. Thus he carefully closes every cranny of his bed-chamber against its entrance, and he prefers that his lungs should receive the mixed effluvium from his cellar and larder, and from a patent little modern aquarius in lieu of it. Why should man be so terrified at the admission of the night air into any o' his apartments? It is nature's overflowing current, and never carries the destroying angel with it. See how soundly the delicate wren and the tender little robin sleep under its influence; and how fresh, and vigorous, and joyous they rise amid the surrounding dewdrops of the morning. Although exposed all night long to the air of heaven, their lungs are never out of order; and this we know by the daily repetition of their song. Look at the newly-born bear, without any nest to go to. It lives and thrives, and becomes strong and playful, under the unmitigated inclemency of the falling dews of the night. I have here a fine male turkey, full eight years old, and he has not passed a single night in shelter. He roosts in a cherry-tree, and is always in the primest health the year throughout. Three dunghill fowls, preferring this cherry-tree, to the warm perches in the hen-house, took up their airy quarters with him early in October, and have never since gone to any other roosting-place.

The cow and the horse sleep safely on the cold, damp ground, and the roebuck lies down to rest in the heather, on the dewy mountain top. I myself can sleep all night long, bareheaded, under the full moon's watery beam, without any fear of danger, and pass the day in wet shoes, without catching cold. Coughs and colds are generally caught in the transition from an overheated room to a cold apartment; but there would be no danger in this movement if ventilation were attended to — a precaution little thought of now-a-days.—*Watterton's Essays on Natural History.*

SHOES.

The shoes of the horses should be of equal thickness throughout, with a flat ground surface, as those with high heels, which asinine smiths make in imitation of their own, are dangerously absurd. The toe, which ought to be raised, is thus lowered, and Nature's plan reversed, who elevates the point in order to avoid obstructions. The web should be wide, and of the same width throughout, instead of being pinched in, because Vulcan operator "likes to see the shoe well set off at the heels." This is both unphilosophical and detrimental; it deceives the eye of man, and injures the foot of the horse. "The *outer* e 'ge of the foot rests on the inner edge of the shoe, and the remaining width of the web projects beyond the hoof;" so that the master who thinks his horse has a good open foot, only has to be proud of a bad, open shoe, which both conceals deformities underneath, and "invites with open arms a bad road to come and do its worst." The heels are made bare just where the navicular joint is most exposed; and if that be inflamed, what must the agony be when the unprotected foot treads on a sharp flint? The horse falls "suddenly lame," "drops as if he had been shot," "phrases in much too common use to require explanation;" and small is the pity which the suffering animal meets with from man; who having destroyed the use of his victim's feet, abuses him because he cannot go; and imputes "grogginess" to him as a crime, as if he werein liquor like a groom, and not in agony.—*Miles, Veterinary Surgeon.*

ARTESIAN WELLS.

A late Paris letter says, the famous Artesian Well, commenced in 1832, at Kissengen, a city of Rhenish Bavaria, is just finished. This immense work, of which the workmen began to despair, has given resulst which have never been seen before. Kissingen is situated in a saline valley at nearly 300 metres above the level of the Baltic sea. In the month of June, 1849, after 17 years of hard labor, they had succeed in reaching a depth of 560 metres, a (metre is about 39 inches) before getting to this it was necessary to cut through several beds of salt separated by masses of granite. They then arrived at a first bed of carbon acid gas, followed by new masses of granite, and finally the 11th of this month, a violent concussion knocked away without injuring any body, the scaffolding which marked the orifice of the well, and then was immediately presented the curious spectacle of a column of water 12 centimetres in diameter, which rose with prodigious force to the height of 30 metres spreading them on all sides like the branches of a magnificent palm tree, and thus forming the most extraordinary jet d'eau imaginable. The water clear as crystal, comes from a soil of a temperature of sixty-six degrees Fahrenheit and gives a volume of twelve cubic metres a minute. It is forced by an atmospheric subterranean of carbon gas, acting with the force of fifty ordinary atmospheres.

☞ We may begin to take Time into our houses and pay by the month as we do for gas and water—for a Mr. Peyrot of St. Etienue, has aranged an electrical clock, which at small expense and by means of communicating wires, will indicate the same moment upon a myriad of clock faces. In this manner one clock will serve a whole city. What a vista of pleasant possibil ities this discovery opens! No more inaccuracy in dinner arrivals—no more being caught at home by difference in clocks, at hours arranged for friends or creditors to call. Decidedly there is no end of the things of which our philosophy has not dreamed.

THE RICHEST FAMILY IN ENGLAND.—The Arkwright family is the richest in England. The head of the house died lately, and the personal property he exchanged for the narrow accommodations of the coffin, was sworn to be over five millions sterling—say $25,000,000. It was the inventive genius of Richard Arkwright, the barber, who made such great improvements in the manufacture of cotton, that elevated his family from poverty and obscurity to their present proud position.

MACADAMIZED ROADS IN TURKEY.

From the Boston Rambler.

The Turkish government have recently undertaken a work of internal improvement, which, considering the people who have engaged in it, and the difficulties to be encountered in the character of the country, must appear almost as magnificent an enterprise, in their eyes, as our Pacific Railroad does to us. It is the construction of a Macadamized road (so the Turks themselves call it, getting the name as well as the idea from the English) more than 30 feet wide from Trebizond to Erzroom, a distance of 200 miles. The present method of transporting goods is on the backs of animals; but it seems even the Turks have an inkling of better times coming, and begin to consider their camels, mules and donkeys as rather behind the age. The people of the interior wish to wear European broadcloths and American cottons, and drink New England rum, but they can hardly afford these luxuries when they are obliged to pay for transporting them horse-back 300, 500, or 1000 miles. And then, again, they must pay for these things in hard cash, for though their vast plains are capable of raising immense quantities of wheat, it will not pay to transport it on animals to the seaboard, and hence the balance of trade is ruinously against them. The exports of Trebizond, for instance amount to only one-fourth of the imports. The people are beginning to open their eyes to these facts, and one result is the contemplated road above mentioned. The work commenced about three months since, under the direction of European engineers, and the first load of pounded stone was laid upon the road with religious ceremonies, such as chantings, prayers, and the slaying of sheep in sacrifice. All Trebizond turned out to witness the commencement of this (to them) stupendous work, which it is calculated will not be completed in less than four years.

We have gathered the above facts from a letter in the *Puritan Recorder*, the writer of which gives an amusing account of the manner in which the Turks have gone about this rather Yankeeish enterprize. The mass of the laborers are to be drafted from the villages along the line of the road. More than 1000 have already been called out; and in the spring some 10,000 will be set to work at different points. The Sultan's orders are that these men are to be fed and well paid. They ought therefore to receive, at the common rate of wages, 8 piasters (32 cts.) each per day; they actually receive but 2 (8 cts.) It is said by those who are best acquainted with the way things are managed in that country, that without doubt the government is charged full 8 piasters for each man's day's work, and that the 6 piasters, which the poor villagers do not get, is pocketed by those in authority over them.

In defect of more solid comforts, however, the laborers have plenty of entertainment of a lighter kind provided for them. Music and dancing they have to the full. It is no unusual thing to see some 50 or 60 men marching in single file down the hill at which they are at work, each man with stone on his sholder, but they have a drummer at their head and march to the sound of his music. Go where two or three hundred are digging away a bank, says the writer referred to, and you will find on the top of the bank perhaps half a dozen drums, fiddles or bag-pipes all in full operation, with some buffoon playing fantastic tricks, as an accompaniment, or perhaps a knot of workmen dancing to the sound of the music, while their companions continue their digging. For any upon whom the music and dancing have not the desired effect, there remains the touch of the whip of overseers stationed in the rear. Under the combined influence of the two appliances, music before and whips behind, however, the men are kept pretty steadily at their work: sometimes indeed they are wrought up to quite a frenzy of zeal, then the way the handcarts, loaded with earth or stone, come rattling down the hill, is, to say the least, alarming to any spectators who may happen to be in the way.—Eight or ten men will have hold of one cart, pullers and pushers all running and leaping and yelling like so many madmen.

Soon after the commencement of the work, the engineers came very near getting themselves into uncomfortably warm water, by proposing to run their road through a corner of a cemetery.—The fanatical feelings of the Turks were evidently rising, but the engineers ordered out extra music, and sent an unusual number of workmen to dancing, and while the attention of the crowd was diverted the necessary graves were removed, and that part of the work completed, beyond all undoing. The Turk, it is well known is a fatalist, and when a thing becomes a fixed fact, he acquiesces without further ado. The engineers, therefore, ran little risk in proceeding as they did, for the laborers acquiesced in the sacrilege of the cemetery as one of the things fated by Allah, and beyond human control.

It is interesting to note the impetus which the civilization of Europe and America is giving to everything that comes in contact with its many and complicated wheels. The stagnent waters of barbarous and semi-civilized people are beginning to be troubled, and must soon yield to the current which is bearing the world onward with resistless power. The rusty mental machinery of the Musselman, the Hindoo and the Pagan, is beginning to feel the friction imparted on every side by the keen and active mind of the Englishman and Yankee, and must either move forward in harmony with the movements of that mind, or be ground to powder beneath their force. These new disciples to the go-ahead principle, it is true, are rather awkward in their first steps. When an English plough was introduced into one of the Hindoo provinces, and its superiority over their own rude instruments pointed out, the natives were so astonished and delighted with the contrivance, that as soon as the agent's back was turned they painted it red, set it up on end, and *worshipped it.* A Turk playing the Yankee as the reader has seen above, is almost as ridiculous a sight.—But let us be patient. Every thing must have a commencement, and national civilization and enterprize are not proper objects for contempt, even when we find them just bursting the swaddling-bands of infancy, or running about in short frocks and pinafores. The leaven, once at work will rapidly spread, till new life is infused through the body politic.

Anotta Dye.—This beautiful summer color is one of the readiest known to the good housewife; but as there are some who have to make it, we will give them the simple direction. First, be careful to procure the article pure, as it is one very subject to adulteration. Cut it into small pieces and boil it in soft water with an equal weight of pearlash, in a copperboiler, say one pound to four gallons of water. Rinse the articles to be dyed, in clean water, and then let them boil some time; take out and rinse.—The quantity of anotta used must be regulated entirely by the depth of color required. A little experience will soon teach that.—*American Agriculturist.*

DURABILITY AND DECAY OF PLANK ROADS.

A Plank Road may require a removal, either because it has worn out at top by the travel upon it, or because it has been destroyed at the bottom by rot. But if the road has traveled enough to make it profitable to its builders, it will wear out first, and if so it will have earned sufficiently enough to replace it twice over, as we shall see presently. The liability to decay is therefore a secondary consideration on roads of importance. As to natural decay, no hemlock road has been in use long enough to determine how long the plank can be preserved from rot. Seven years is perhaps a fair average. Different species of hemlock vary greatly, and upland timber is always more durable than from wet and low localities.—The pine roads in Canada generally last about eight years, varying from seevn to twelve. The original Toronto road was used chiefly by teams hauling steamboat wood, and at the end of six years began to break through in places, and not being repaired was principally gone at the end of ten years. Having been poorly built, badly drained, not sanded, and no care bestowed upon it, indicates the minimum of durability. Oak plank cross-walks are used in Detroit, the plank being laid flat on those of pine.—It is believed that oak plank, well laid, would last at least twelve to fifteen years. One set of sleepers will outlast two plankings. Several Canada roads have been re-laid upon the old sleepers, thus much lessening the cost of renewal.—*New Yorker.*

Continuous Railroad Iron.—Messrs. E. Pratt & Brothers have exhibited in the lower room of the Fair at Washington hall, specimens of the continuous railroad iron manufactured at Mount Savage Iron Company's Works, near Cumberland, Md. The rail does not differ in form essentially from the usual T rail, but is divided into two sections, longitudinally, and a continuous rail is thus obtained by breaking the joints. This, it will be readily perceived, is an important improvement, entirely obviating the liability to give way at the joints which is experienced in the use of other patterns of rail. The Utica and Schenectady Railroad Company, in New York, after thoroughly testing the rail by a twelve month's trial, have contracted for the supply of 1,000 tons of it, the larger portion of which has already been sent forward. With this rail a greater speed may be obtained over the road, with equal safety and less wear and tear to the road and cars, and it will no doubt soon recommend itself to general use.—*Baltimore Sun.*

Ice and Water.—Water is subject to a remarkable anomaly, which is often brought to our notice at this season. There is a poin in its temperature—about 40 degrees in our common thermometer—at which it is most dense or compact, and from which it expands in heating till it becomes steam, and expands in cooling till it becomes ice, which takes place at 32 degrees. This is a beautiful provision of nature. By being less dense than water, ice floats on the top, and, by forming a hard crust, prevents the mass of less cold liquid beneath from being greatly affected by the intensely cold atmosphere. Thus the lower stratum of water in lakes and rivers continues to maintain a temperature from six to eight degrees above the freezing point; and in this comparatively warm stratum fishes dwell as usual, till the return of spring brings them to the surface, to look out upon a new heaven and a new earth. Running streams resist congelation longer than lakes, and the ocean, in temperate climates, longest of all, partly from its depth, and partly from the quantity of saline matter it contains.

Distillation of Sea Water.- In June last, three of her Majestys ships—the Arrogant, 46, Captain Fitzroy; the Plumper, 11, Commander Nolloth; and the Reynard, 11, Commander Cracroft—sailed from Portsmouth, furnished with the Government distilling and cooking galley, constructed by Mr. Grant. By the improvements made since the introduction of the galleys into the naval service, the quantity of fresh water obtained by the distillation of salt water during the period it is required to keep the fires alight in the galley for the purpose of cooking, will, on the average, supply each individual on board the vessels with one gallon of distilled water every day. The latter kind of water continues to be preferred for drinking and culinary purposes to the water usually supplied to ships. It passes immediately from the condenser into the water tanks at the same temperature as the surrounding ocean. In these tanks it becomes perfectly aerated, losing altogether the vapid flavor, common to all distilled water, in the course of a few hours, without the aid of chemical preparation or mechanical arrangement, by the simple fact of the action imparted to the fluid by the motion of the ship when at sea. A series of interesting and important experiments have been made on board the Illustrious, 72, by Mr. Crosse, with the view of imparting, at the moment of distillation, the oxygen of which the water is deprived in the process, and giving to it that briskness which is found in spring water. This is effected by passing a proportionate currant of electricity through the particles of water by means of an extremely simple and self-acting apparatus. The results of the experiments made have been highly satisfactory. The only point to be determined is, whether any artificial means, either chemical or mechanical, are required for aerating distilled water on board ship, as it is found that such water becomes sufficiently aerated in the course of a few hours by the motion imparted to it by the ship; but if the distilled water be required for immediate use, Mr. Crosse's application produced the object desired most effectually.

☞ It is said that Capt Ericson is engaged in producing a steam carriage for use upon plank roads, by which immense loads may be transported at a good speed, with small cost. Fifteen years ago, many attempts were madein Enndgla to produce a steam carriage suitable to use on common roads, but no experiment resulted profitably. Either the expense of the power or the softness of the roads prevented the practical introduction of the machines, though many succesful steam journeys were performed. There seems to be no good reason why steam power cannot be successfully used on our plank roads, and we have no doubt it will soon be.

Bells.—The nearer bells are hung to the surface of the earth, other things being equal, the farther they can be heard. Franklin has remarked that, many years ago, the inhabitants of Philadelphia had a bell imported from England. In order to judge of the sound, it was elevated on a triangle, in the great street of the city, and struck as it happened on a market day; when the people coming to market, were surprised on hearingthe sound of a bell at a greater distance from the city than they had ever heard any bell before. This circumstance excited the attention of the curious; and it was discovered that the sound of the bell, when struck in the street, reached nearly double the distance it did when raised in the air..

In air, sound travels at the rate of from 1,130 to 1,140 feet per second. In water, 4,708 feet per second. Sounds are distinct at twice the distance on water that they are on land.

Rhetoric.—The celebrated Dr. Emmons was once asked what was the best system of rhetoric for clergyman. His reply was, "First, have something to say; second, say it." For attaining perspicuity, and precision of style, his directions where, "Consider *what* you wish to say, and then *how* to say it." He very aptly likened style to a frame work to hold our thoughts. "It is like the sash of a window." he says, "a heavy sash will obscure the light. The object is to have as little sash as will hold the lights, that we may not think of the frame, but have the most light."

A Religious Hypocrite.—While Dr. Chalmers was very busily engaged one forenoon in his study, a man entered, who at once propitiated him under the provocation of an unexpected interruption by telling him that he had called under great distress of mind. "Sit down, Sir; be good enough to be seated," said Dr. Chalmers, turning eagerly and full of interest from his writing table. The visitor explained to him that he was troubled with doubts about the divine origin of the Christian religion; and, being kindly questioned as to what those were, he gave, among others, what is said in the Bible about Melchizedek being without father and mother, &c. Patiently and anxiously Dr. Chalmers sought to clear away each successive difficulty as it was stated. Expressing himself as if greatly relieved in mind, and imagining that he had gained his end, "Doctor," said the visitor, "I am in great want of a little money at present, and perhaps you could help me in that way." At once the object of the visit was seen. A perfect tornado of indignation burst upon the deceiver, driving him in very quick retreat to the street door, these words escaping among others—"Not a penny, Sir; not a penny! It's too bad! it's too bad! And haul in your hypocrisy upon the shoulders of Melchisedek!"

LOVE OF HOME.

There is none, or but little love of home among the American farmers. One of the reasons, is, because they change that home so often, there are but few "homes of taste," which as you say truly, are only to be found where the "Architect of nature" is employed to ornament them. With more abundant cheap materials to form such houses, we probably have fewer of them than any other country on earth, which contains as many intelligent minds as this does. But unfortunately we have no schools to teach the "science of farming," and creating such houses; and so our people lack contentment in places that might be like a rural Paradise, because the attractive blandishments of taste are not there; and so they sell at the first "fair offer" and sever the easily-broken links that bind them to home, and away they go to the gold-teeming land of California, or to some wonderful wheat-growing land in the west,where ague helps them shake off all disposition ever to make such a home of taste as will bind them and their children to it, generation after generation.—*American Agriculturist.*

The London Porter Breweries.—Twice the quantity of porter already brewed in London in a year would be something like equivalent to the estuary of the Mersey opposite the Pierhead at spring tide. When one of Meux's vats burst, it swept away a whole street—houses, inhabitants, and all like an overflow of the Scheldt; and that was in 1814, when vats were mere pipkins to what they are now. At Whitebread's which ranks but third in the trade, there is one of such prodigious dimensions, that its twenty-five hoops weigh from one to three tons each, and its contents are 20,000 barrels, being some twenty times the capacity of the Tun at Heildelberg. Barclay's brewery is already half the size of Paxton's Plate-glass Palace, and covers upwards of ten acres; so if the produce of porter be regulated by superficial extent of premises, and that there is to be double produce next year, the building ought to be fully equal to the Aladdinlike structure in Hyde-park. The firm brew about half-a-million of barrels a year at present, being at the rate of some ten gallons per head, or per mouth, or every man, woman, and child in London, saying nothing of what the six other great houses urn out.

☞ Female loveliness never appears to so good advantage as when set off with simplicity of dress. No artist ever decks his angels with towering fathers and gaudy jewelry, andour dear human angels, if they would make good their title to that name, should carefully avoid ornaments which properly belong to Indian squaws and African princes. These tinselries may serve to give effect on the stage or upon a ball room floor, but in daily life there is no substitute for the charm of simplicity. A vulgar taste is not to be disguised by gold and diamonds,

"———Loveliness
Needs not the foreign aid of ornament,
But is, when unadorned, adorned the most."

A Beautiful Simile.—"The tears of beauty are light clouds floating over a heaven of stars, bedimming them for a moment that they might shine with greater lustre than before.

☞ A witty word spoken by a rich relative is a very witty affair—even when the wit is not very apparent; but nobody laughs at the wit of a man in disgrace, or whose coat is out at the elbows.

RECIPES.

(*From Mrs. Webster's Improved Housewife.*)

Ginger Nuts.—Take one quart of molasses ; mix one pound and there quarters of sugar, oneand a quarter of butter, seven of flour, four ounces of ginger, a nutmeg, and a little cinnamon.

Graham Bread. — To be sure of having a good article, send good, clean wheat to mill; have it ground rather coarsely, without bolting; nd keep the meal in a dry cool place. Sift it through a common hair sieve, he before using it. This will sufficiently separate tgrosser particles. Take six quarts of this wheat meal one teacup of good yeast, and six spoonfuls of molasses, and mix them with a pint of milk, warm water and a teapoonful of saleratus. Make a whole in the flour, and stir this mixture in the middle of the meal till it is like batter. Then proceed as with fine flour. Make your dough when light enough, into four loaves. Make it hotter than forcommon bread; and bake it about an hour and a half. It is an excellent article of diet for the dyspeptic and the costive, and for sedentary persons, and for children.

Crackers.—Rub six ounces of butter into two pounds of flour; dissolve two teaspoonfulls of saleratus in a wine glass of milk, and strain it on the flour; add a teaspoonful of salt, and milk sufficient to roll it out. Beat it with a rolling pin for half an hour, pounding it out thin; cut it into cakes with a tumbler bake them about fifteen minutes, and then take them out of the oven. When the rest of your things are baked enough, take them out, set in the crackers again, and letthem remain till baked hard and crispy.

Family Cake. — Take rice and flour, of each 6 ounces, 9 well beaten eggs, half a pound of pounded and sifted lump sugar, and half a pound of carraway seeds. Beat all well together one hour, then bake an hour in a quick oven. This is avery light cake, and is very suitable for young persons and delicate stomachs.

Preserving Lard.—Take lard in the leaf excluding all bloody or lean pieces, then salt it down as you would pork. When wanted for use, try out enough lard to last a few weeks. This mode is communicated by a gentleman who has had much experience in this business, and he prefers this mode as the lard keeps perfectly sweet through the year.

To Toughen new Earthen Ware.— It is a bad plan to put new earthenware into boiling hot water; it should first be plunged into cold water, and placed over a fire, where it will heat moderately to the boiling point, and then be permitted to cool again. This process greatly promotes the toughness and durability of common earthenware, which is generally objectionable for domestic uses, on account of its fragility. The glazing on this kind of ware will remain uninjured by the boiling if a handful of rye or wheat bran be added to the water, and prepare it to withstand successfully, and for a long time, the action of acid or salt.

Goliah of Gath.—The following account of this Giant is extracted from Malcolm's Bible dictionary: "Goliah of Gath was 11 feet and five inches in height; his brazen helmet weighed 15 lbs., his target or collar, affixed between his shoulders to defend his neck, about 30; his spearwas 26 feet long and weighed 58 lbs., its head weighing 38 lbs; his sword 40 lbs.; his greaves on his legs 30 lbs ; and his coat of mail 126 lbs! Making in all 223.

Importance of a Single Vote.—One single vote sent Oliver Cromwell to the Long Parliament, Charles Stuart to the scaffold, revolutionized England, and made Great Britain free. Four votes in the city of New York, made Thomas Jefferson President of the United States. One vote gave us the Tariff of 1842, and one vote madethe Tariff of 1846. One vote gave us Texas, made war with Mexico, slew thousands of our People andpurchased California — turned thither the tide of of emigration, and will change the destiny of the world !—*Day Book.*

Queen of Greece.—The Queen of King Otho of Greece, is said to be the most beautiful Queen in Europe. She is the daughter of the Duke of Oldenburg — is about 30 years of age, her figure elegant, fair hair, lovely blue eyes, clear complexion, and a most winning smile. She is a Lutheran, but the King is a Catholic.

A Great Dinner. — The Greatest Dinner ever given in was that of Lord Romney to the Kent Volunteers, when George the Third reviewed them near Maidstone. The tables were seven miles and a half long, and the boards for the tables cost £17,000.

The World. — The world contains nine hundred and seventy two million of Inhabitants. Of these six and half millions are Jews, one hundred and fifty millions Mahommedans, one hundred and seventy-five and a half millions Christiansand six hundred and forty millions Pagans.

General Wolfe.—It appears that a Packet, containing twelve original Letters, written by Wolfe to a very intimate Friend and brother Officer, have been lately discovered amongst thepapers of a relative of that friend in Glasgow. They embrace the period between 1749 and 1758, a space of nine years, and will appear in the next number of the New York Albion.—*Quebec Gazette.*

Ambition.—There are few men who are not ambitious of distinguishing themselves in the nation or country where they live, and of growing considerable among those with whom they converse. There is a kind of grandeur and respect which the meanest and most insignificant part of mankind endeavor to procure in the little circle of their friends and acquaintance. The poorest mechanic—nay, the man who lives upon common alms, gets him his set of admirers, and delights in that superiority which he enjoys over those who are in some respects beneath him. This ambition which is natural to the soul of man, might receive a very happy turn; and, if it were rightly directed, contribute as much to a person's advantage, as it generally does to his uneasiness and disquiet.

The Inhabitants of Spitalfields.—Not a few of the inhabitants are the descendants of the unfortunate Huguenots, who fled from France in 1685, during the reign of Louis, the Fourteenthto avoid the cruel persecution which followed the revocation of the Edict of Nantz. To that proscription, as impolitic as it was barbarous, we owe the foundation and establishment of the silk manufacture in England.

Telegaph under Water.—There are there lines of submarine telegraph wire in working operation under the Hudson river, four under the Connecticut, two under the Delaware, and eigth under the Haarlem river, all coated with gutta percha. And one, we learn from the Chicago *Journal*, on O'Reilly's line, under the river at Chicago.—*Tribune.*

☞ Water contained in old cisterns, if it be covered, and some years old, is better than new water.

Editor's Notices, &c.

ENGLISH AGRICULTURAL SOCIETIES.

The Royal Agricultural Society of England has elected for the third time the Duke of Richmond as President. The report of the Council was very satisfactory, showing the great good which is being effected by this important Society. The next Exhibition of live stock will take place in Hyde Park, at the World's Exhibition ; but the Society will hold no separate show for implements, &c., which will be incorporated with that of the great Industrial.

The Smithfield Christmas Cattle Show of fat Stock appears to have been equally well sustained as in former years ; in some respects, indeed, improved. The premises have been much enlarged both for cattle and implements ; the latter now forms a great addition and attraction. The quality of the animals, of all kinds, is highly spoken of, not being so exorbitantly fat as formerly. The Duke of Richmond is President, and the show was visited by the Queen and Prince Albert, who was as usual, a successful competitor.—The prices obtained for meat are loudly complained of by graziers as being wholly unremunerative ; 4s. per stone of 8 lbs., being the top quotation for the first quality.

The Birmingham Christmas Cattle Show, which was founded in 1848 for the Midland district, would seem to have been eminently successful. A capacious hall has been erected at a cost of £6000 ; and both the Exhibition and arrangements are highly spoken of.—The Show of poultry of all kinds, ducks, geese, turkeys, &c., both as to quantity and quality is said to have scarcely been equalled before in England.

ADELAIDE ACADEMY, TORONTO.

It affords us much pleasure to state that this excellent Academy is in the most flourishing condition. Professor and Lady, the Principal and Preceptress, have long been known to the Canadian public as instructors of youth, and we can confidently recommend their establishment to parents desirous of giving their daughters a thorough and accomplished education. The number of pupils in attendance is larger than at any previous time. The next term commences on the 3rd of February, a most favourable time for pupils to enter.

THE GOVERNOR GENERAL AND AGRICULTURE.

Lord Elgin has just given another proof of an enlightened desire to promote the welfare of the country he governs. His Excellency has caused to be written, and circulated among the French Canadian farmers, a suitable pamphlet, embodying the results of practical experience, with the patriotic view of restoring the already exhausted lands of the Lower Province. More of this in our next.

AGRICULTURAL CHAIR IN THE UNIVERSITY.

The Senate, we understand, has passed the statute, introduced a short time since by Professor Nicol, authorising a Professorship of Agriculture in the University, and portion of the grounds to be set apart for an Experimental Farm in connection with the Board of Agriculture. The emolument of the office is left to be decided by the Commission of Visitation.

BOARD OF AGRICULTURE.

The Secretary of the Provincial Association, begs to acknowledge a donation of books, from Professor Nicol, for the proposed library of the Board of Agriculture. It consists of a complete set, in quarto vols. of the Transactions of the original British Board of Agriculture, under the able presidency of the late Sir John Sinclair. Donations of this kind will be thankfully received.

To our Brethren of the Press. We shall feel much obliged to those of our cotemporaries who will notice our January number, stating our terms, &c., for the information of their readers. Agricultural Societies or Clubs subscribing for 25 copies and upwards, will be supplied at half-a-dollar each. Single subscriptions, *one dollar*, always in advance.

The *Agriculturist* has proved an annual loss to the proprietor since its commencement, besides the time and labor bestowed upon it. Last year it nearly paid expenses, and we hope to realize hereafter something like remuneration for the heavy outlay we have incurred. We trust Societies and others intending to subscribe will forward their orders as soon as possible ; we will thus be enabled to determine the size of our Edition, and not incur the loss of too large a surplus.

THE MARKETS AND WEATHER.

Agriculturist Office,
January 16th, 1851.

The "January thaw" has spoiled the roads and consequently our markets are sparely supplied. Yesterday evening sharp flashes of lightning and heavy peals of thunder startled the citizens. Rain fell during the greater part of the day and night. The wheat and flour market made a slight advance within the last week, as high as 4s. was paid for good samples of wheat. The Oswego millers are in the market, but they say they can't afford more than 3s. 9d. Those who can afford to hold their grain will not we think be wise to sell for less than four shillings.

	S.	D.		S.	D.
Flour, ℔ brl 196 lbs.	16	3	@	18	9
Wheat ℔ bushel 60lbs.	3	9	@	3	10
Barley ℔ bushel 48lbs.	2	8	@	3	9
Rye ℔ bushel 56 lbs.	2	3	@	2	6
Oats ℔ bushel 34lbs.	1	1	@	1	2
Oatmeal ℔ bbl 196lbs.	17	6	@	20	0
Pease ℔ bushel 60lbs.	1	6	@	2	0
Potatoes ℔ bushel.	1	3	@	2	0
Beef ℔ lb.	2	0	@	0	3½
Beef ℔ 100lbs.	10	0	@	17	6
Veal ℔ lb.	0	2	@	0	4
Pork ℔ lb.	0	2½	@	0	3½
Pork ℔ 100lbs.	20	0	@	23	9

CANADIAN AGRICULTURIST.

" The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

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THE WINTER MANAGEMENT OF LIVE-STOCK.

Every farmer is but too well acquainted with the difficulties of sustaining, in a thriving condition, any large number of the domesticated animals, during our long and usually severe winters.—How frequently is it asserted that the value of the animals when brought to market, in spring and summer, is not equal to the cost and trouble of maintaining them. Besides the actual loss from disease and death, mainly induced by exposure and insufficient nourishment is in all seasons, more or less, of considerable amount. There is too, no small share of unpardonable inhumanity to be taken into the account, under a sense of which every rightly constituted mind must feel ill at ease: for "the merciful man is merciful to his beast."

The following suggestions may be of use to several of our readers, in reference to this important department of rural economy.

1. It should be borne in mind that *atmospheric temperature* exerts an astonishing influence on the healthy condition of animals and the amount of food they require. With plants, which are also living, organised beings, this principle is well known to everybody; each zone of the same mean temperature having its own distinctive class of vegetation. It is true that the range of the same kinds of animals on the earth's surface, is

greater than those of plants; but it is easily proved, that such animals which the farmer raises for the market, may be placed in physical conditions, which require to be improved, or modified by art, in order to ensure him a profitable business.

2. It has been long known to those who have had experience in the rearing and fattening of animals, that by keeping them in a warm temperature during the winter months, a great saving is effected in the amount of food consumed, and their general health and improvement are thereby greatly promoted. Science has recently thrown a new and striking light, pregnant with benefit and instruction to the farmer, on the hitherto mysterious subjects of animal heat and nutrition. According to the theory of Liebig, which is now generally accepted, we believe, by the most eminent chemists and physiologists of the age, the food received into the stomach of the animal, is there subjected to a sort of combustion, by means of which animal heat is supported, and the vital action of the various organs of the body sustained. Upon this intelligible principle then it is evident, that if animals be exposed to the severe cold of a Canadian winter, however well they may be fed, by far the larger portion of the food will be absorbed in generating animal heat, and but comparatively little will remain for replacing the daily recurring waste of the system, or at most not enough to retain the animal in a comfortable and thriving condition. Whereas, exposure to cold on a poor and insufficient food, is the sure precursor of starvation and death; as the opening of every Spring but too frequently witnesses.

3. The teachings, then, both of science and experience, impress upon the farmer's mind, *the necessity of providing for all domesticated animals, adequate shelter*. And in a country like this, where the range of the thermometer is so great, and the changes of temperature so frequent and sudden, we regard all attempts at improved or profitable rearing of live-stock as utterly hopeless; unless this common sense principle is practically observed.

We are fully aware of the great difficulties that lie in the way of erecting warm and commodious buildings during the settlement of a new country; notwithstanding, they are none the less essential to the successful and economical management of stock. But a great deal more might be done towards the attainment of this important object, than what we see accomplished, is certain. Even the first settler might manage to shelter the yoke of oxen, and cow or two that he possesses, by means of a temporary shanty of boughs and grass. But in old settled districts to see poorly fed cattle shrivering beside the corners of a fence, when the thermometer is ranging between the freezing point and zero, or perhaps below; with nothing but some open leaky shed to go into during the night, and it may be even not that;—to see all this, and the accompanying other *et ceteras*, no one need feel surprised, that animals subjected to such treatment, should be poor, miserable, and stunted; that many of them will be so reduced, as to be unable to rise when they lie down; and that their owners should complain that cattle breeding is an *unprofitable* business.

We have referred, it is true, to extreme cases; and between them and the best arranged buildings and modes of management there are almost infinite gradations. What might be classed under the head *indifferent*, are extremely and most unnecessarily numerous. We have seen many instances of excellently arranged and comfortable farm buildings in Canada, the State of New York, and in Ohio, that reflect much credit on the taste and knowledge of their projectors and owners; a subject to which we may hereafter refer, in more detail.

4. The *preparation* of food for cattle is next in importance to warmth and shelter. A *mixture* of food has been determined by experience to be the most beneficial, and the straw-cutter and steaming furnace, have been found, in well conducted farmeries, exceedingly advantageous. The cutting of hay and straw, the boiling of flax-seed, and the steaming of roots, given either separately or in a state of mixture when

warm, has now been ascertained, from extensive practice, to be the most effectual and economical mode of preparing food. Animals thus treated and properly housed, will be less subject to disease; *will thrive and fatten on* 25 *per cent. less food*, than under the ordinary mode of management. We state this as the result of extended observation and personal experience in England; and what we have seen and learnt on this continent, only tends to confirm us in the belief of its general beneficial application. The reader must not infer that we advocate cooked food alone, for horses and cattle; but for the latter, especially, a large portion of the food, properly mixed and given warm, is highly economical and nutritious, both for increasing muscle and laying on fat, admits not of a single doubt. We saw the other day, at Mr. Spencer's foundry, in this city, a boiler fitted to a portable furnace, that seemed well adapted to the wants of farmers; and the price is moderate.

5. In the construction of buildings for the accommodation of animals, due regard must always be had to *ventilation*. This may appear to some as almost an unnecessary caution, since the prevailing defects that now abound, consist in numerous apertures frequently in the roof, as well as in the walls, through which snow and rain find an ingress, with chilling draughts of air. In the construction of stone or brick buildings, however, there is seldom sufficient attention paid to such an admission of pure air, and the escape of that which has been vitiated by breathing and exhalations, as effectually to secure the comfort and well-being of the animal. Close stables are particularly objectionable, and sheep when housed in winter, frequently suffer for want of room and fresh air.

In a word, the same great object must be kept in view with regard to domesticated animals, which our friend, Mr. Sheriff Ruttan, is so laudably endeavoring to promote in reference to man and his abode. No animal that breathes, can exist in a state of health, *without a constant supply of pure air*. If a farmer adds to this, pure water; a warm shelter; nutritious food, properly prepared and regularly given; with scrupulous attention to *cleanliness;* he will be amply rewarded by the health, comfort, and improvement of his stock; and what is also worth a great deal,—the approval of his moral and rational convictions. It may be said, that to do all we have recommended, is a difficult, and to many, an almost impracticable task. We answer, that in doing your utmost to reach the standard, you will be sure to find your reward;—and remember the old adage: that what is worth doing at all, should be worth doing well.

AGRICULTURE AN ART.

We take the following article from that excellent paper, *The Rural New Yorker*, with the remarks thereon of the Editor. The writer evidently belongs to the more intelligent and thinking class of practical farmers. We agree with much that he says; but if more candour had been shown, in pointing out the true connection between so important an art as agriculture and the scientific principles upon which it is built, a healthier and juster impression would have been made on the mind of the reader. No man in his senses ever asserted, that farming could be learnt either in the laboratory or from books. But the knowledge of practice acquired from work and observation in the field, may, and has been materially improved, and rendered more intelligible and certain in its results, by the aid and light afforded it, by means of science. What is science, but *Truth?—the truth of nature;* and all successful art or practice, must be in accordance with it. If chemistry, for instance, has not as yet realised all the expectations which sanguine minds indulged in reference to agriculture; it has unquestionably been most beneficially suggestive; it has thrown light on many of the obscurest points of practice;—and it has furnished the practical farmer, with an intelligible theory of his art. All honor then to such men as Liebig, Johnston and others, who are devoting the highest attainments in science, to increasing the earth's fruitfulness;—

and rendering more rational and elevating, the primitive and healthful pursuits of the tillers of the soil.

Let every farmer who has a son to educate, believe and remember that science lays the foundation of everything valuable in agriculture.—*Exchange paper.*

Science, i. e. knowledge, is just as valuable to a farmer as to a lawyer, a clergyman, or a physician. Ignorant men practice law and physic, and preach—after a fashion. Sometimes they make money. The same thing may be said of ignorant agriculturists. Nevertheless it is quite true that knowledge—education—learning, if you please—contributes as much to the elevation, prosperity and happiness of him who directs the plough, as of any other man.—*Rochester American.*

That knowledge is necessary to him who would succeed in business of any kind, none can or will deny. That the same kind and amount of knowledge and mental discipline are requisite for success in the several callings enumerated above by the editor of the American, few, if any will claim.

It is a popular notion at the present day to urge that everybody must know something about every thing. If any one undertakes to follow out this notion, he will find in the end that he knows but little of any thing. It requires no little time and effort to know every thing about any thing, even the most limited subject.

What folly then to urge, as is not unfrequently done at the present day, that a farmer needs to master the sciences of Chemistry, Geology, Mineralogy, Botany, &c., &c., with vegetable and animal Physioloy,—Latin and Greek and Mathematics, and other specific branches of science too numerous to name, in order that he may practice farming successfully.

That knowledge is a good thing and is desirable for all, who will question? That a knowledge of the science of Chemistry is absolutely necessary to the successful practice of the Art of Agriculture, we deny.—To acquire a knowledge of agricultural chemistry and vegetable and animal anatomy and physiology, in a sufficient degree to enable a farmer to conduct his labor in strict harmony with the laws of Nature, as developed and demonstrated by these sciences, would require close study and experimenting for many years—more than are ordinarily allotted to man in these latter ages of the world, and stronger mental powers than the majority of mankind possess. Dr. Liebig, with the unusual natural capacity which he possesses for, and his undying enthusiasm in the study of the science of chemistry, has not yet, according to his own views, mastered the elements of this branch of science to which he has thus far devoted his life. And with all his theoretical and scientific knowledge of agriculture, we doubt very much whether Dr. Liebig would succeed in practical farming, as well as some of our Monroe county farmers, who never looked into a chemistry and perhaps have pledged themselves never to do such a bookish act. Here, then, we have two men, each successful in his vocation, eminently so.—The one is devoting his life to the science of agriculture, and the other to the art.

The knowledge of science is one thing—one kind of knowledge—the knowledge of art is another and a different sort of knowledge.

Art is the application of knowledge to effect a desired purpose. Music, for example, is both a science and an art. And there are multitudes of excellent singers who are as ignorant of the science of music as many of our best farmers are of the science of chemistry. And, on the other hand, there are those who are deeply read and skilled in the science of music, to whom, should they attempt to sing, Dodd's epigram would apply with great force:

> "Swans sing before they die: 'twere no bad thing,
> Should certain persons die before they sing."

The art of farming, and consequently the success, depend more on personal observation and experience than on books; not that we discard books—no, by no means—neither would we substitute them for observation and experience.

Your success as a farmer depends vastly more upon the knowledge of the art of agriculture, than of the science—the one is within the reach of all—the other can be enjoyed only by your Liebig's, your Norton's and your Emmons's. These doctors are ever willing to instruct you in the manipulations of yours, the noblest of arts.

In what we have written here we are not to be understood as opposing the most thorough liberal course of agricultural education;—but as opposing the notion that no man can succeed as a farmer without being an agricultural chemist. There is but one Liebig among the Germans—but one Boussingault in France—but one Johnston in England, and but one —— in America. Every farmer should, and may, without the knowledge of these distinguished *savans*, derive aid in the practise of his useful art, from their excellent writings.—Let all do so—and no one would rejoice more than we, to see every farmer a good practical chemist—but as this is entirely impracticable, we have sought in what we have written, to demonstrate that a man may be a good, thorough, and successful farmer, without being a learned chemist.

W.

Remarks.—Without fully endorsing the above article, we must admit that it contains much truth. There is no doubt that some writers on chemistry claim too much for their favorite topic—thus taking the opposite extreme of those who reject all science in farming. They depend too much upon science alone—which our correspondent, who properly represents a numerous class of strong-minded farmers, is as far wrong in depending exclusively upon the results of observation and experience. We hold that science and art should be combined—that farmers should not only observe and experiment, but avail themselves of the knowledge to be obtained from the investigations of others. The subject is a suggestive one, and we may hereafter take occasion to discuss it more fully.—Ed.

DRAIN FOR ROADS.

(*For the Canadian Agriculturist.*)

Stamford, C. W., 4th Jan., 1851.

Sir,

Mr. Moyle, in a late number of the *Agriculturist*, has given a section of a drain to be built with plank, under the centre of plank roads. That a drain is necessary who can doubt, that has travelled upon the planks with the mud flap, flap, flap beneath them, and at times squirting six or eight feet right into your face. Likely Mr. Moyle's is the best or most convenient. I will suggest another mode of obtaining the same object, by having the two middle timbers, not scantlings, but whole trees, hewed to 10 inches or more, according to the size of the trees; these laid under the wheel tracks, would leave an open space, the width of the track, to be filled with large stones at the bottom and small stones for a covering under the planks, thus forming a drain and a solid foundation for the horses' feet;—and wherever stones can be conveniently obtained, a road more solid and much more durable can be made.—Likely the expense would be too great; yet as the road would remain firm with so solid a centre and last many years longer, it would pay. Roads are not made for the passing day, and no reasonable expense should be spared in the making, so as to ensure durability. Plank or scantling, as now used upon the bare soil, sink, and the planks begin to spring. If this can be prevented, in any way, a great point will be gained. A practical difficulty in laying down the plank, from the thickness of the centre pieces, may be a fatal objection to my plan. That more strength in the centre of the road is necessary, few will doubt, and likely some person conversant with the subject, may suggest a suitable remedy; more scope being given to private enterprise by sale of the roads.

Yours, &c.,

J. J.

INQUIRY AS TO THE CAUSE OF SICKLY VEGETATION IN SPRING.

(*For the Agriculturist.*)

Sir,

A ten acre field in cultivation, has for the six preceding years presented a curious appearance in May or early June; whether winter wheat or spring crop, uniformly bearing a sickly appearance, and suspending all growth in the plants, while a yellow cast is predominant. Having attained that stage, in a few days it begins to recover, the crop is not behind at harvest, but it does not amount to more than two-thirds of the usual produce. Twice in six years a light dressing of dung from the yard, has been spread, with benefit. Plaster has been used four seasons, and yet each spring presents the same sickly hue; the soil is heavy clay, far from rich; works heavily and with small profit.

Can you, or any of the correspondents of the *Agriculturist*, say which of the chemical proportions of the soil is lacking? The sulphates were partially supplied by the plaster and the dung; are the phosphates or carbonates wanting? If so, in what way can they be profitably supplied? Can subsoiling be useful on a hard poor clay?

Yours truly,

J. J.

Stamford, January 1851.

[Our correspondent does not inform us how the field in question has been farmed for many years past. From what we have observed of the heavy clays in his district, and from the description which he gives of this particular field, we are inclined to think that the appearance and results of which he complains are induced by a general, rather than special exhaustion of the soil by over-cropping. It requires a very carefully conducted *chemical analysis* of a soil to determine accurately its exact constituents and their relative proportions; such knowledge too, when obtained, can rarely be turned to any good account in the management of a farm, except under the guidance of a sound judgment and much practical experience. In the case in question, the crops assume a yellow hue (a sure indication of sickness,) and their progress retarded, just at the time when their growth should be the most vigorous and uninterrupted. Now this may arise from chemical or mechanical causes, or from both. If on dry land, deeply and thoroughly cultivated, the crops put on a yellow sickly appearance in spring, not traceable to drought or sudden changes of temperature, it may be fairly assumed that the soil is deficient in *nitrogenous* substances, and the only means of meeting the evil, during the period of growth, is to apply manures, rich in nitrogen, which can be readily yielded up to the pressing wants of the crop. The nitrates of potash and soda (the former, common saltpetre,) being deliquesent salts, are well adapted for such a purpose. We have applied them to all kinds of grain in a growing state in England, more or less every year, for *doctoring* sickly crops, and generally with complete success. Unhealthy patches in the same field arising from very local causes may by these

means be brought into as vigorous a state as the remainder. These kinds of manure should be evenly sown upon the growing plants in spring, but not too late in the season. From 150 to 250lbs. per acre will generally be found sufficient, and in a few days after a shower or a damp atmosphere, the change will appear quite magical; the color of the plants rapidly changes from a sickly yellow to a swarthy green and their growth is greatly promoted. Guano, when of good quality, acts in a similar way, but as this manure contains a larger number of ingredients that enter into, and build up the organism of plants, and being frequently rich in *phosphates*, it is more generally to be depended on than the *nitrates;* particularly in developing the grain in the ear. Woolen rags are an excellent manure, but their action is slow, and they yield many nutrient principles during their tardy decomposition. Farm-yard manure varies greatly, both as regards its composition and fertilising power. When it is the result of poorly fed animals, with a mixture of straw and other refuse, after a long exposure to the action of the rain and atmosphere, it is but of little worth.

We would suggest to our correspondent, the propriety of improving his field by *subsoiling;* deepening the entire soil can scarcely fail of being beneficial, provided it be sufficiently dry; if not, draining should be resorted to as the first step to any kind of improvement. The manures before mentioned, (except dung,) have been referred to more with a view to show what is done in other countries, and to throw a little light on the important subject of the nutrition of plants, than from any hope of their becoming available by Canadian farmers, to any great extent, for many years to come. If the soil upon the application of strong vinegar, does not slightly effervesce, a good dressing of lime (say from 100 to 130 bushels per acre) would, no doubt, be highly beneficial. In this country, however, it is very rare that a large expenditure for manures can be justified, by the value of the returns. The grand secret is to sustain the original stamina of the soil, not by expensive manures, but by husbanding and judiciously applying all that can be made in the farm-yard, and by adopting *a less scourging system of cropping*. Our correspondent would most probably find, that laying down his field to grass, for a few years, so as to carry a goodly number of cattle and sheep, it would afterwards yield a profitable grain crop. Soils of naturally a second-rate quality, should be very leniently dealt with, and in a country where labor is high and produce low, such lands should be allowed long alternate intervals of rest by pasturing. We shall be happy to hear from any of our agricultural correspondents on these matters.]—EDITOR.

VILLAGE LECTURES.—No. 3.

The Soil and the Air Continued.—Let me furnish other proofs of the fact that most of the bulky part of our plants is derived from the air. I have already proved it by showing that there is no other source except the air from which a plant can get its combustible part, and there are two other ways in which I can prove it—I can show you that the air is heavy enough to render it very likely that it contains enough of substance to grow plants of, and I can show you that it actually does contain the very things on which plants feed.

Why has the soil always been supposed to furnish the substance of plants? Is it because there is enough of it—good heavy stuff, that you might suppose able to build up heavy substantial plants and trees? Why the air surrounding the earth is at least twenty times as heavy as all the surface soil surrounding the earth—even supposing it to be on the average twelve inches deep? Though it is so easily moved through, the air is heavy enough, I can tell you. There are 15 pounds' weight of it resting on every square inch of ground. The whole atmosphere of the globe weighs as much as a ball of lead would weigh, though it were sixty miles in diameter. You can judge in some measure of the weight of the air by the way in which it will stretch a piece of rubber India extended over an open jar fitted to the plate of an air pump. If it were held at the four corners, and weights piled upon it, they would stretch it, and if heavy enough they would break it; but if it rested on a stool they could not.—Just so the air above it cannot stretch it now, because it rests on the air beneath; but remove the stool and the weights will stretch it; remove the air beneath, as can be done by this pump,

and the air above will stretch it and burst through it.

But we can actually weigh the air. Take a bent tube, three feet long, filled with quicksilver, and invert it. Why does the liquid metal stand 50 inches higher in one leg than in the other.—If the air were pressing on both ends alike, it would stand at a common level in both branches of the tube; the reason why it is standing so high here must be because there is something pressing on the surface which is not pressing on the other—the reason why it is standing so high in the one side is because the air is pressing only the other. The fact must be that the weight of the air pressing on the surface of the metal in the one leg of the tube is just the same as the weight of quicksilver above that level in the other. The air is supposed to be forty-five miles high, and I say that supposing this tube extended forty-five miles high to the outside of the atmosphere, this leg would contain the same weight of stuff in it as that, or else the balance would not be maintained. This is in fact a balance, weighing whatever is put into one leg of the tube by the height to which it will raise the quicksilver in the other; the air pressing here raises the quicksilver there to a height of 30 inches; that is, the weight of air pressing on every square inch of the earth's surface is the same as if 30 inches deep of quicksilver rested on every square inch. Now, 15 pounds' weight of the quicksilver would rest on every square inch, if it were covered 30 inches deep with it; therefore, 15 pounds of air rest on every square inch of the earth's surface. If I let the air in on this end again, you will see that the quicksilver, (now bearing an equal weight of air on both sides,) will regain the same level in each side; so that this is in fact a measure of the weight of the air.

When made in a more portable and elegant form, it is called a *barometer*, from two Greek words which signify a measure of weight; and the height of the quicksilver in the tube indicates the weight of the air, which presses it up; and as dry air weighs heavier than damp air, when the quicksilver sinks in the tube we anticipate wet weather, and so this tube becomes a weather glass, and when furnished with a float on the surface of the quicksilver, it pulls round an index figure on a dial plate, and points to rain, fair, stormy, and so on; and this is the principle on which your weather glasses act. Well then we have just the same weight of air around the globe as if the surface of it were covered thirty inches deep with quicksilver, and that is as heavy as twelve to twenty feet of soil would be; and if you were never astonished at the eight or ten inches of soil being able to grow repeated crops of grass or corn or trees without wasting under the process, surely you ought not to be astonished at the air, which is twelve or twenty times as heavy, being able to do the same thing. The leaves of the tree do not indeed stretch through the whole air in search of food, as their roots do through the soil; but when the winds are continually mixing the particles of air up and bringing fresh ones to be fed upon by the foliage of the plants and the trees, so that ought to be no hindrance in the way of our believing what is really the truth, namely, that plants get everything in them which will burn up from the air, and only their incombustible part—their ashes, which will not burn away from the soil.

But now I will prove to you that the air really does contain, in the midst of it, the very particles of which wood is composed. I have here a piece of wood dried at a red heat, under circumstances which hindered it from taking fire; it is a piece of charcoal in fact, which is nearly all that remains of the wood after the water is driven out of it. Now, I say that the tree got this charcoal from the air; first, because it could not get it from the soil, which has not anything near enough of the stuff in it, and the air is the only other thing which the plant could get at to obtain it from.

The argument merely proves that all the carbon in vegetables came *originally* from the air. It does not determine what portion of any particular plant came from the air, nor what from the soil. In the early stages of its growth, the plant derives a good deal of its substance from the soil. and some of even the carbonic acid of the air it may absorb through its roots. To supply the land with organic matter, in the art of cultivation, it is necessary, not merely the mechanical effort thus exerted on its texture, but for its use as food in supplying the plant with a portion of its organic part.

Secondly, because the air is heavy enough—has matter enough in it to supply many such trees or whole forests, if they were wanted, from it—for it is many times heavier than the soil from which people generally think that such trees and plants do come. And, thirdly, I believe the tree gets its charcoal from the air, because the air is not only enough, but it contains the right things, too; it contains the charcoally particles of this black substance present in it, as I shall prove in my next lecture.

Washing Fluid.—A friend gives us the following receipt for Washing fluid, assuring us it is good. Our lady readers can try it:—3-4 lb unslacked lime; 2 lbs soda; and 8 qts. water.

PROFESSORSHIP OF AGRICULTURE.

The following is the statute just passed in the University Senate, relative to the Chair of Agriculture, and the establishment of an experimental farm:—

"Whereas it is desirable for extending agricultural education, and rendering the University more useful to the largest class of the people of this province, that immediate steps be taken for filling the chair of Agriculture."

"And, whereas the efficiency and usefulness of the said chair would be greatly promoted by the establishment of an experimental farm in connexion with it."

"And, whereas it is desirable to set apart a portion of the University grounds within the city of Toronto for a limited period, for the experimental farm aforesaid."

"Be it therefore enacted by the Senate of the University of Toronto, that the Caput shall be directed, and they are hereby directed to make known within two weeks from the adopting of this Statute, by Public Advertisement in the *Canada Gazette* that the chair of Agriculture is vacant, together with the duties, salary, and emoluments belonging to same as provided by the Statute—in pursuance of the 34th clause of the Act of Parliament 12 Vic. chap. 82 and to take and adopt all necessary proceedings for the filling of the said chair."

II. That it shall be the duty of the Professor of Agriculture to give instruction in the science of Agriculture by Lectures or by practical teaching, on an experimental farm, or by both methods, as may be deemed most advisable—also to manage the experimental farm in connexion with the Board of Agriculture, and to take charge and superintendence of the remaining portion of the University grounds under the immediate orders and directions from time to time of the Board of Endowment.

III. That a portion of the University grounds, not less than fifty acres, shall be selected and set apart forthwith for the experimental farm aforesaid by a committee of the Senate—and such committee to consist of the Vice-Chancellor, the President, Professors Gwynne, Nichol, J. C. Morrison, Esq., J. McMurrich, Esq., Dr. Hayes, J. Cameron, Esq., provided that not less than 6 acres shall be appropriated to a Botanical Garden.

IV. That so soon as the said Chair shall be filled and the said Committee shall select and set apart such portion of the said grounds as aforesaid and shall have reported the same as to the Senate and the Endowment Board,—that part of the said grounds so reported as selected and set apart as aforesaid shall be placed at the disposal of the Board of Agriculture for Upper Canada, free of rent, for the purpose of establishing on the same an experimental farm for a term of not less than ten years, in connexion with the said Chair of Agriculture.

V. That after the expiration of said term of years of the said University, and the said Board of A. shall not agree for a further term of years—the University shall pay for any brick or stone buildings that may have been erected on the said grounds, by the said Board of Agriculture—with the consent of the Senate of the said University, testified by a resolution of the same, the value of such buildings if not otherwise agreed upon to be ascertained by arbitrators, one to be appointed by each of the parties—umpire to be chosen by the arbitrators, all the wooden buildings to be removed by the Board of Agriculture.

VI. That the Solicitor shall prepare and see executed an agreement on the part of the said Board of Agriculture and the University in accordance with the provisions of this statute.

CULTIVATION AND PREPARATION OF FLAX.

From the London Morning Chronicle.

We have been favored with a copy of a letter, received by Thos. Price, Esq., from the Board of Trade, in answer to the application made on behalf of several noblemen and gentlemen, for a charter of incorporation to enable a company to carry out, upon an extensive scale, the preparation of flax upon the unsteeped process, and also to give encouragement to its increased cultivation in Ireland. In the application for the charter, the parties engage to purchase as large a quantity of flax, in the stalk, as can be grown upon at least 100,000 acres of land in Ireland, at a price of £12 per acre, exclusive of the seed, a price which cannot fail to render that crop highly remunerative to the grower.—From the "Prize Essay on the Cultivation of Flax in Ireland," by James MacAdam, Esq., Secretary to the Royal Society for promoting the growth of flax, it appears that the profit to the grower upon an acre of flax grown and prepared upon the present system is £10. Out of this sum, however, the grower has to pay—for steeping, taking from steep, spreading, turning, lifting, and scruthing—a sum of nearly £4. The parties now applying for a charter propose to take the flax in its raw state, exclusive of the seed, at the price of £12 per acre, the grower being thus saved the whole expense attendant upon the steeping process. On the other hand, if the grower possess the facilities of preparing the flax, he will be at liberty to dress it upon the patented mode, upon taking a license from the association and will be enabled to bring it into a state fit for the market, without the expense and risk incurred by the steeped process. The subjects of an extended cultivation and improved preparation of flax are now occupying the attention of most of the Governments of Europe, as well as of the United States. The offer made by the Government of Holland for the purchase of an invention, connected with the preparation of the fibre, to which we have already referred, shews, in the most convincing manner, the importance which is attached to it by that Government. The subject has also occupied the attention of the French Government, and, a short time since, M. Payen, the celebrated French chemist, was deputed by that Government to visit Ireland, in order to inspect and report upon the mode of cultivation and the preparation of the fibre in that country. In his report to the Government, that gentleman deserved the present movement in favor of and extension of the growth of flax, and the probable substitution of linen for cotton as an "industrial revolution which was fast maturing itself." The President, in his message to the Legislature Assembly, on Tuesday last, under the head of "Agriculture and Commerce," alluded to the inquiries which had been thus set on foot, and announced the intention of the Government, in accordance with the recommendation of the report of M. Payen, to submit to the Legislature a bill calculated to extend and facilitate the growth of flax in France. The portion of the President's address referring to this subject is as follows:—

"The remarkable methods for cultivating, cleaning, and preparing flax, which have just been introduced into England, Ireland, and Belgium, could not but attract the attention of the Government. It has had the subject thoroughly inquired into, and the results of its examination will be submitted to you in the *expose des*

motifs of a bill which will be submitted to you for the purpose of freeing from all entrance duty flax seed coming from Riga."

The Government of this country, in considering the application for a charter to encourage the growth of flax in Ireland, has very properly decided upon relaxing the rule by which they are governed in the case of granting charters under ordinary circumstances; and the Board of Trade has announced that, as soon as the Company, proposed to be established in Ireland, shall have been so far matured as to give a reasonable assurance that its objects will be fully and adequately carried into effect, "My Lords will, on the matter being referred to them, in the usual mode, be prepared to recommend that a charter of incorporation should be granted." Had the Government refused, upon any mere technical grounds, to grant to the enterprising promoters the necessary means for carrying out this great undertaking, its conduct so doing would have deserved the severest condemnation. We are gratified, however, in seeing that they are so far impressed with the importance, in the present circumstances of Ireland, "of encouraging, by every means, the cultivation of flax in that country," as to depart from their usual rule, in order to afford an opportunity for the developement, upon a grand scale, of one of the most important and valuable of its industrial resourses.

IMPROVEMENT IN FARMING.

When shall we see improvement in farming? We do not entirely despair, when we look over our country and see a great improvement in some individuals' farming. In our region of country, these kind of farmers are pretty scarce, but where they are, we find that they realise two fold in quantity and quality of grain, and have a great deal more pleasure and satisfaction while they are at it. But, ask the farmer "what are the improvements desired!" We, in answer, will name a few. First, see what kind of soil you have and what kind of manure is best adapted to it. You will have to exercise a sound judgment, connected with experience, to determine this, as some kinds of manure will not do for some kinds of soil.—If grain be your dependence, see what kind of grain best suits your land. See if draining is necessary; here let me say, that draining is oftentimes more necessary than farmers suppose. If needed do it with as little delay as possible. Do not put it off until you have more time; for it is getting worse every year, and you are incurring more and more labor on it. As the land gets worse, it is harder to till, and you receive less profit; if you were to spend only a few days, perhaps, in draining, your labor would grow less and without doubt your crop would be increased from one quarter to one half. Select your manure judiciously and apply it to to the crops that need the variety.—Would not this add much to your crops? Who does not know that to apply fresh manure directly to wheat will often ruin it; when, if it had been preceded by a crop of corn, or roots, it would have been of great value, and have been enough for the wheat.

Keep your land thoroughly subdivided, and let not the weeds grow. It costs no more to raise corn than weeds, and which is of the most value? This mastering weeds is a great improvement in farming, and one that will well pay the farmer for his trouble.—Try it. Try manuring. Try draining. Try weeding. Combine the three, and a dozen other improvements that you think of, and you will get pay. But, says one, "if we do all this we cannot attend our thirty acres of corn to hand." Well, can't you see that fifteen hundred bushels of corn off of twenty acres, is as good as the same off of thirty acres? We hope the day may come, when farmers may attend more to the improvement of their lands, in the place of tiying how many acres of grain they can manage to the hand. When we see the above rules adhered to, with many others, then shall we find an answer to the question that commenced our article. — *Dollar Newspaper.*

Eve's Apple Tree.—In an interesting volume, entitled "Recollections of Ceylon," it is asserted that Eve's apple-tree—(*kaduragha,*) is there a common tree. It is of medium size, its leaves nine inches in length by three in width, with twenty or more strong fibres branching off from each side of the central one. Its fruits are attached to a stalk of considerable length and are produced in pairs. The appearance presented by this fruit is said to be very peculiar, having the form of an apple of the common kind, with about one third bitten out. It is not edible, and is regarded as a most deadly poison.—When punctured, it exudes a juice or milk so acid, that a single drop falling on the skin, immediately raises a blister. "The outside," says the author, "is of a bright yellow color, and the inside a deep crimson. It contains a large quantity of black seeds, like the pips of an apple, embedded in a quantity of scarlet colored pulp. I have counted fifty-eight of these seeds in a single fruit. When ripe, the fruit bursts and the seeds fall out; the skin adhering to the stalk for a considerable time."

Longevity of Animals.—A necrological table of statistics, exhibitory of the relative length of life enjoyed by different animals, presents the following interesting facts:—

"The average length of the life of the Lion, the Tiger and the Panther, in the Menagerie at Paris, is six or seven years.—The male lion, however, has lived to the age of twenty-nine, and the female to the age of seventeen years. Those lions which are carried about for exhibition, from place to place, generally live much longer—often from seventeen to twenty and upwards.—The Siberian Bear lives only to three or four years of age; the Black Bear being of a more robust constitution, from seven to eight. The family of bears known by the apellation of *Maitin-monte a-Barbe,* lives from seventeen to twenty, and behold a long series of generations. The Hyena lives only four or five years; Dromedaries and Camels, thirty or forty; the Elephant, which, when free, reaches the age of a century, only attains a quarter of that space of time; the Giraffe, which is now in the *Jarden de Plantes,* has been there seventeen years, and still enjoys excellent health. Monkeys only survive four or five years, any it is mentioned as a great phenomenon that one lived in Gibraltar for seventeen years."

To Young Men.—How, after the duties of the day are over, do you employ your evenings? This is a question of importance. If you have no regular employment, no fixed pursuits to engross your attention and operate as a stimulas to the mind when unemployed, you must of necessity, have many leisure and unoccupied hours—intervals when time will hang heavily, on your hands, and suggest the necessity of some means to relieve it of its weight. The very time which is dissipated in idleness would, if devoted to study, enable many a young man to obtain eminence and distinction in some useful art.

General Science and Miscellany.

THE FAVORITE POISON OF AMERICA.

We take the following article from a recent number of that excellent periodical, the *Horticulturist*. It is from the pen of Mr. Downing, the talented Editor; who on his late return from a professional tour in Europe, was deeply impressed with the pale and emaciated appearance of his own countrywomen, compared with the rosy cheeks and robust constitutions which he had observed on the other side of the Atlantic. A large portion of the male sex might be included; especially such as have not employment or exercise in the open air. An Old Countryman landing at Boston or New York, must be painfully struck with the generally unhealthy appearance of the people, and it takes sometime before his eye becomes accustomed to the difference. The phenomenon is to be accounted for in the different habits of living; atmospheric changes in regard to temperature, moisture, &c., and as the writer very correctly insists, in the overheated and ill-ventilated apartments in which females, in particular, spend the greater part of their existence during the winter months. The parching heats of summer render out of door exercise much less agreeable and invigorating than under the cloudier and cooler skies of the British Isles. The reason and will of man, however, when properly exercised in discovering and obeying the general laws of health, will do much in raising him above the disadvantages of natural climate. Draining the swamps, moderation in diet, thorough ventilation in dwellings, and the sustaining of animal heat, by taking wholesome food and exercise in the open air, rather than by the over artificial heating of apartments;—these constitute the essential conditions under which sound health is to be obtained and enjoyed.—With the scientific explanations of the writer, in one or two instances, we do not altogether agree; but considering the immense importance of the subject, as applying to the health and happiness of the people, throughout the northern section of this immense Continent, and the attractive and convincing manner in which it is treated, we think that we shall be doing a service to our readers, by laying the article before them, without abridgment.

"One of the most complete and salutary reforms ever, perhaps, made in any country, is the temperance reform of the last fifteen years in the United States. Everybody, familiar with our manners and customs fifteen or twenty years ago, very well knows that though our people were never positively intemperate, yet ardent spirits were, at that time, in almost as constant daily use, both in public and private life, as tea and coffee are now; while, at the present moment, they are seldom or never offered as a means of civility or refreshment—at least in the older states. The result of this higher civilization or temperance, as one may please to call it, is that a large amount of vice and crime have disappeared from amidst the laboring classes, while the physical as well as moral condition of those who labor too little to be able to bear intoxicating drinks, is very much improved.

"We have taken this consolatory glance at this great and salutary reform of the habits of a whole country, because we need something to fortify our faith in the possibility of new reforms; for our countrymen have, within the last ten years, discovered a new poison, which is used wholesale, both in public and private, all over the country, till the national health and constitution are absolutely impaired by it.

"'A national poison? Do you mean slavery, socialism, abolition, mormonism?' Nothing of the sort. 'Then, perhaps, tobacco, patent medicines, or coffee?' Worse than these. It is a foe more insidious than these; for, at least, one very well knows what one is about when he takes copious draughts of such things. Whatever his own convictions may be, he knows that some of his fellow-creatures consider them deleterious.

"But the national poison is not thought dangerous. Far from it. On the contrary, it is made almost synonymous with domestic comfort. Old and young, rich and poor, drink it in with avidity, and without shame. The most tender and delicate women and children are fondest of it, and become so accustomed to it, that they gradually abandon the delights of bright sunshine and the pure air of heaven, to take it in large draughts. What matter if their cheeks become as pale as the ghosts of Ossian; if their spirits forsake them, and they become listless and languid! Are they not well housed and *comfort-*

able? Are not their lives virtuous, and their affairs prosperous? Alas, yes! But they are not the less guilty of poisoning themselves daily, though perhaps unconscious of it all the time.

"The national poison that we allude to, is nothing less than the vitiated air of *close stoves*, and the unventilated apartments which accompany them!

"'STOVES'—exclaim a thousand readers in the same breath—'stoves poisonous? Nonsense! They are perfectly healthy, as well as the most economical, convenient, labor-saving, useful and indispensable things in the world. Besides, are they not real Yankee inventions? In what country but this is there such an endless variety of stoves—cooking stoves, hall stoves, parlor stoves, airtight stoves, cylinders, salamanders, etc.? Why, it is absolutely the national invention—this stove—the most useful result of universal Yankee ingenuity.'

"We grant it all, good friends and readers; but must also have our opinion—our calmly considered and carefully matured opinion—which is nothing more nor less than this, that stoves—as now used—are the national curse; the secret poisoners of that blessed air, bestowed by kind Providence as an elixir of life,—giving us new vigor and fresh energy at every inspiration; and we, ungrateful beings, as if the pure breath of heaven were not fit for us, we reject it, and breathe instead—what?—the air which passes over a surface of hot iron, and becomes loaded with all the vapor of arsenic and sulphur, which that metal, highly heated, constantly gives off!

"If in the heart of large cities—where there is a large population crowded together, with scanty means of subsistence—one saw a few persons driven by necessity into warming their small apartments by little close stoves of iron, liable to be heated red-hot, and thereby to absolutely destroy the purity of the air, one would not be so much astonished at the result, because it is so difficult to preserve the poorest class from suffering, in some way or other, in great cities. But it is by no means only in the houses of those who have slender means of subsistence that this is the case. It is safe to say that nine-tenths of all the houses in the northern states, whether belonging to rich or poor, are entirely unventilated, and heated at the present moment by close stoves!

It is absolutely a matter of *preference* on the part of thousands, with whom the trifling difference between one mode of heating and another is of no account. Even in the midst of the country, where there is still wood in abundance, the farmer will sell that wood and buy coal, so that he may have a little *demon*—alias a black, cheerless, close stove—in the place of that genuine hospitable, wholesome *friend* and comforter, an open wood fire-place.

"And in order not to leave one unconverted soul in the wilderness, the stove inventors have lately brought out "a new article," for forest countries, where coal is not to be had either for love or barter—an "air-tight stove for burning wood." The seductive, convenient, monstrous thing! "It consumes one-fifth of the fuel which was needed by the open chimney—is so neat and clean, makes no dust, and gives no trouble" All quite true, dear considerate housewife—all quite true; but that very stove causes your husband to pay twice its savings to the family doctor before two winters are past, and gives you thrice as much trouble in nursing the sick in your family as you formerly spent in taking care of the fire in your chimney corner,—besides depriving you of the most delightful of all household occupations.

"Our countrymen generally have a vast deal of national pride, and national sensitiveness, and we honor them for it. It is the warp and woof, out of which the stuff of national improvement is woven. When a nation becomes quite indifferent as to what it has done, or can do, then there is nothing left but for its prophets to utter lamentations over it.

"Now there is a curious but indisputable fact, (somebody *must* say it,) touching our present condition and appearance, as a nation of men, women and children, in which we Americans compare most unfavorably with the people of Europe, and especially with those of northern Europe—England and France, for example. It is neither in religion or morality, law or liberty. In these great essentials every American feels that his country is the birthplace of a larger number of robust and healthy souls than any other, But in the bodily condition, the *signs of physical health*, and all that constitutes the outward aspect of the men and women of the United States, our countrymen, and especially countrywomen, compare most unfavorably with all but the absolutely starving classes on the other side of the Atlantic. So completely is this the fact, that though we are unconscious of it at home, the first thing (especially of late years) which strikes an American, returning from abroad, is the pale and sickly countenances of his friends, acquaintances, and almost every one he meets in the streets of large towns,—every other man looking as if he had lately recovered from a fit of illness. The men look so pale, and the women so delicate, that his eye, accustomed to the high

hues of health, and the more vigorous physical condition of transatlantic men and women, scarcely credits the assertion of old acquaintances, when they assure him that they were "never better in their lives."

"With this sort of impression weighing disagreeably on our mind, on returning from Europe lately, we fancied it worth our while to plunge 200 or 300 miles into the interior of the state of New-York. It would be pleasant, we thought, to see not only the rich forest scenery opened by the new railroad to Lake Erie, but also, (for we felt confident they were there,) some good, hearty, fresh looking lads and lasses among the farmers' sons and daughters.

"We were for the most part disappointed. Certainly the men, especially the young men, who live mostly in the open air, are healthy and robust. But the daughters of the farmers—they are as delicate and pale as lilies of the valley, or fine ladies of the Fifth Avenue. If one catches a glimpse of a rose in their cheeks, it is the pale rose of the hot-house, and not the fresh glow of the garden damask. Alas, we soon discovered the reason. They, too, live for seven months of the year in unventilated rooms, heated by close stoves! The fire-places are closed up, and ruddy complexions have vanished with them. Occasionally, indeed, one meets with an exception; some bright-eyed, young, rustic Hebe, whose rosy cheeks and round, elastic figure would make you believe that the world has not all grown "delicate;" and if you inquire, you will learn probably that she is one of those whose natural spirits force them out continually in the open air, so that she has as yet in that way escaped any considerable doses of the national poison.

"Now that we are fairly afloat on this dangerous sea, we must unburthen our heart sufficiently to say that neither in England nor France does one meet with so much beauty—certainly not, so far as charming eyes and expressive faces go towards constituting beauty—as in America. But alas, on the other hand, as compared with the elastic figures and healthful frames abroad, American beauty is as evanescent as a dissolving view, contrasted with a real and living landscape. What is with us a sweet dream, from sixteen to twenty-five, is there a permanent reality till forty-five or fifty.

"We should think it might be a matter of *climate*, were it not that we saw, as the most common thing, even finer complexions in France —yes, in the heart of Paris, and especially among the peasantry, who are almost wholly in the open air—than in England."

(*Concluded in our next.*)

Observations and Remarks on the Meterology and Climate of Upper and of Lower Canada; by William Winder, Esquire, M. D., Librarian to the Honorable the Legislative Assembly of Canada.

Amongst those who have studied the subject of Meterology and the climate of Canada, the idea has been entertained, that the mean temperature of the two Provinces is nearly equal on an average of years. The accompanying tables, though not perhaps perfectly exact, have been compiled with the view of obtaining something like an approximation to the truth of the above statement. They comprise a period of thirty-four months, from 1847 to 1849, inclusive, being the only years to which the compiler had access, with reference to both sections of the country, and are deficient in the months of January, 1847, and February, 1849, of which no record could be found. The month of January, 1847, for Lower Canada, was indeed available; but the corresponding one for Upper Canada, necessary for comparison, could not be procured. The whole of the observations are taken from a register of the weather kept at Montreal, and from those furnished at the Royal Magnetic Observatory at Toronto, by Captain Lefroy. The fruits, plants, and trees of a country are said to form a good criterion of its climate, and this opinion would seem to be correct with respect to the temperature of Canada. As one proof of this, it may be remarked that in June of the present year, the Hon. L. J. Papineau made an excursion to the Falls of Niagara, and botanizing in the woods surrounding them, found only two plants which do not grow on the mountain of Montreal, viz:—the black walnut, and the Persimmon, *Diospyros Virginiana*, sex. syst., *Diœcia Octadria;* natural order, *Ebenœcia:* a native of the warm climate of the Southern States of the American Union. From hence he inferred, and it appears justly, that the temperature of the atmosphere in and about Montreal and the Falls, must be nearly the same; and on examining the tables above mentioned, we find the result of the average to be a difference, for the thirty-four months compared, of only 1.46 °. A further examination also shews that the mean temperature of Montreal is 46. 4 °, and that of Toronto 45.50 °, whilst the means of the two added together give the medium temperature of the two Provinces as 45.77 °. The eminent French philosopher Arago, states the mean temperature of Europe to be 56.6 °, and that of the centre of England is said by Dr. Craigie to be 50. It is impossible to ascertain, with any degree of precision, the portion of

heat felt in any part of America, merely by measuring its distance from the equator. The maxims which are founded upon experience in the old hemisphere, will not apply to the new, where the cold maintains a manifest preponderance. Various causes contribute to render the climate of America different from that of the old continent. America advances much nearer to the pole, than either Europe or Asia. Both these have large seas to the north which are open during part of the year, and even when covered with ice, the wind that blows over them is less intensely cold than that which passes over land in the same high latitudes; but in America the land stretches from the St. Lawrence towards the pole, and spreads immensely to the west. The wind in passing over enormous mountains, covered with snow and ice, becomes so impregnated with cold, that it acquires a piercing keenness, so that over the whole of North America, a north-west wind and cold are synonomous terms. This difference in heat is supposed to be equal to twelve degrees, but Dr. Mitchell contends that it amounts to fourteen or fifteen degrees.

It is an undoubted fact, that in the same degrees of latitude, the winters are colder and the summers warmer in North America than in Europe. This general observation is very important with respect to agriculture, commerce and navigation. The following facts are interesting as proving the foregoing assertion:—Hudson's Bay, in the same latitude as the Baltic Sea, is even in summer encumbered with ice. In New York, in the latitude of Madrid and Naples, the winter accompanied with ice, lasts, on an average, 164 days; and the Delaware is frozen over five or six weeks. New York has the summer of Rome and the winter of Copenhagen; Quebec the summer of Paris and the winter of St. Petersburgh. In America it must then be recollected, that the climate by no means depends altogether on the degrees of latitude but is influenced, more or less, by the winds, the lakes, the great tracts of land in the north, the ocean and the gulf stream. In the northern part of the United States the medium temperature amounts to about 45, and in the southern to 68. Fahrenheit, whilst the foregoing tables shew the mean temperature of the Canadas to be 45.77°.—

			Winter.	Summer.
The medium temperature of Lake		Superior, is	21.	63.
do	do	Lake Ontario	30.	72.
do	do	New Orleans	59.	83.
do	do	Key West	70.	81.

In Quebec, the thermometer sinks to 30. below zero, and rises in summer to 95. above zero. In Baltimore, the thermometer rose twice in the course of eight years to 98., and sank four times below zero; whilst in Montreal and Hamilton (at the head of Lake Ontario) it has been noted as high as 103. of Fahrenheit in the shade.

Humboldt reckons the mean temperature of the air, overland, nearly on a level with the sea, at the equator, at 81.5°. The mean temperature of latitude 45°. At the pole, judging from the observations of Capt. Parry, the mean temperature cannot be taken to exceed 13 below zero.

In the immense valley of the Mississippi, to the west of the Alleghanies, the mean temperatures are nearly the same as in the corresponding latitudes on the Atlantic; but, as in Upper Canada, compared with the Lower Province, the winters are not so cold, nor the summers so hot. The mean temperature of the west coast of America appear to correspond with the mean temperatures of the western parts of Europe.

The preceding remarks apply only to the temperature of those parts of the earth that are nearly as low as the surface of the sea; but as we ascend into the atmosphere the temperature constantly diminishes, so that even in the torrid zone, at a certain elevation, we come to the region of perpetual congelation. The cause of this diminution of temperature is the expansion of the air in proportion to its elevation, which occasions an increase in its capacity for heat, and a consequent lowering of its temperature. This diminution is partly counteracted by large masses of earth which communicate heat to the air. This is probably the reason why the temperature of Mexico and Peru diminishes, according to the observation of Humboldt, only one degree of Fahrenheit for every 495 feet of elevation; while in Scotland, Dr. Hutton, of Edinburgh, states the diminution to amount to one degree for about 268 feet of elevation. He kept a thermometer on the top of Arthur's Seat, and another at Leith, near the level of the sea, for three years. The mean difference between the two was 3., and the height of Arthur's Seat, above the level of the sea, is very nearly 803 feet.

M. Arago has demonstrated that during the last 2,000 years the temperature of the earth has not varied so much as one-fifth of a degree, as otherwise the length of the day would have altered, which is not the case.

When we dig to a certain depth below the surface of the ground, we come at last to a situation in which, if the bulb of a thermometer be put, it remains unaltered during the whole year. The heat at this depth is considered as represent-

ing the mean heat of the place at the surface of the ground. The bottom of the cavern, under the Observatory at Paris, is about ninety feet below the surface of the earth; a thermometer placed in it varies only about one-fifty-fifth of a degree during the whole year, from 52., which is the exact mean temperature of Paris.

It therefore appears, from the peceding observations, that at a certain depth below the surface of the earth, which does not seem much to exceed thirty feet, the thermometer remains unaltered during the whole year, and exhibits the mean temperature of the surface in that locality. Hence the mean temperature of a place may be determined by that of springs flowing from a certain depth (not less than thirty feet) under ground. The wells at New York vary from 32 to 50 feet in depth, and, according to Dr. Nooth, the mean annual variation of their temperature is 2., namely, from 54. to 56.; this would make the mean annual temperature of New York 55.. Dr. J. Hunter states that the temperature of the wells at Brighton, in Sussex, vary from 50. to 52., which would make the mean temperature of the air in that part of England, close to the sea, 51.; whilst the mineral spring at Tunbridge Wells, a short distance from Brighton, is always of the temperature of 50., as appears from observation made in winter and summer. Thus it would seem, that at a certain depth below the surface of the earth, a thermometer indicates the mean temperature on the surface, that this depth is not much more than 30 feet; and that, probably, no great increase of temperature could be found at the depth of sixty feet. When, however, we penetrate to a greater depth below the surface, the temperature becomes higher than the mean of the place, and the elevation of the thermometer increases as the depth augments.

Concluded in our next.

Queenston Suspension Bridge.—A correspondent of the Guelph *Advertizer* gives the following account: — "The towers are built on each side, and most of the cables are stretched across. When finished, it will be, it is said, the largest suspension bridge in this planet (what they have in other planets of course I cannot say.) It is 1043 feet from tower to tower, and it seems quite fitting that this great work should tie together with iron cables the great dominions of the two greatest nations in the world, for the people on the other side admit, that, excepting themselves, we are the greatest nation on the globe; and we in turn admit, that, excepting ourselves, they are the greatest nation! so that putting together the estimation of ourselves and of each other, it certainly comes to this that we are the two greatest nations in the world. But the suspension bridge is truly a magnificient work! It is expected to be completed this winter. There are to be ten cables in all, each cable made of 250 wires; each wire warranted, I am told, to bear 15,000 lbs.— The wires are not twisted, but lie together straight, and are kept together by a strong wire that is wound around them, the same as you would wind a thread about a bonnet wire. The cables are firmly anchored in the work, and pass over two stone towers some 14 feet high. On the top of these towers are solid iron plates, and rollers on these, upon which are other plates with groovings for each of the cables, so that there is no horizontal strain upon the towers, but all the pressure is perpendicular on the same principal with the pressure on the bridge under the strings of a violin. The cables when extended, have the shape of a rainbow turned upside down, and to the uninitiated, it would seem that a bridge built on these cables would give a merry run down to the centre and then be up the hill to the opposite side. But instead of the planking and pathway being over the cables it is under them, and is to be perfectly level. The centre of the bridge will nearly touch the centre of the cables, whilst at either end, it will be some 60 or 70 feet below them, and the work to be sustained by iron rods suspended from the cables. A road has been cut along the side of the mountain to either terminus of the bridge, where solid walls of masonry have been built. The planking is to be twenty feet wide, intended at present for teams; but the towers and iron plates are constructed, so that extra cables can be run over them so soon as the iron horse may be ready with his train of cars, and judging from the interest at present taken in the subject of railroads, "in each of the two greatest nations," this time is not far distant,

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CAPE OF GOOD HOPE.

DISCOVERIES IN SOUTHERN AFRICA—THE NATIVES, PRODUCTIONS, &c.

The news from the interior shows that there is considerable turbulence prevailing among the different native sovereignties or tribes, and that this fact was causing injury to the settlement in various ways. One of the frontier papers states that somewhere about two hundred lives were lost last year, by the collision of different savage tribes, and that similar results will follow in successive years, if the impetuosity of the barbarian people be not restrained.

Discoveries are daily making in regions beyond what was denominated the frontier. Among others, travellers have arrived from the Zulu country. In some places it was fertile and beautiful, with luxuriant vegetation; in others the land was barren, and not a tree to be seen for miles. The chief food of the inhabitants is milk, rice, and sweet potatoes. In one place a party of travellers came to the kraal of one of the principal Zulu chiefs, styled by the natives En Corzin. Here they were hospitably entertained four days. Corzin, the chief, rejoiced in the possess-

ion of twenty wives, all of whom were daily dismissed to the labors of the field, except one favorite dark beauty, who seemed exempt from this unfeminine occupation. A cup-bearer, too, figured at the festive board, reminding the travellers of Pharaoh and the kings of ancient times—a tall, stalworth native, whose head was bound in a large blue shawl in oriental style. The natives use black earthenware cups. These cups were so beautifully glazed, and of such curious workmanship, that the travellers were surprised to find that they were manufactured by the natives. The kraal, or hut, of the chief was surrounded for miles with those of his relatives. About one hundred of these vassals were summoned upon one occasion, and despatched to hunt buffaloes. Large crops of sweet potatoes, and Caffre corn were seen, as well as immense quantities of sugar cane. An expedition of about 40 volunteers, headed by the English crown prosecutor, had under plea of stopping the incursions of the "Bushmen," invading the territory of an old chief, the ally of the English, seized 800 of his cattle and several of the Bushmen boys as captives, and required him to cede all his unoccupied territory to the British, all because he had not prevented the incursions of the Bushmen. The vassals of the old chief, discontented at these proceedings, have fled in terror over the frontier.

Discoveries of considerable magnitude have, according to the Cape Town "Mail," been shed over the geography of the interior of Africa. The substance of it is, that the great lake before reported, discovered in South Africa, although receiving the waters of several rivers, has no outlet to the ocean. About seven days' journey to the north of this lake, a ridge of very high mountains crosses the continent, and beyond it a new "river system" commences, the streams all flowing to the north, and ultimately to the ocean. It on one of these streams, say the accounts, that Mozalekatske and his tribe have made a temporary resting place. This chief, some twenty-five years ago, was in subjection to a Zulu tyrant named Chaka, residing near the eastern coast, south of the latitude of 28 degrees. Escaping from the dominion of his merciless master, he fled with a large body of adherents over the mountains to the north-west, spreading devastation around him as he passed. He was driven still further northwest by the Boers, who, in their turn, have been pushed forward by the advancing civilization of the English. Thus, Mozalekatske, with his ferocious legions, have been retiring continually towards the equator, leaving behind them a deserted country, swept of inhabitants by his destroying march. He has now traversed at least a thousand miles from the point at which his wanderings commenced, at least a quarter of a century ago. Still his indefatigable pursuers dog the steps of the retreating lion, and have already begun to rout him from his latest lair in the centre of the continent. The Cape Town "Mail" hazards the prediction that before another quarter of a century shall have elapsed, the whole interior of South Africa, to the Equator, will be occupied by civilized communities of the European race, and probably under the dominion of Great Britain. Among the discoveries in the new land of promise are ivory in considerable quantities, and many other articles of commercial value.

The Anglican, Independent, and Baptist clergy, have published a declaration protesting against the control assumed by the States in the government of the churches.—*Boston Traveller, January 18th.*

The Humanizing Influence of Cleanliness.—A neat, clean, fresh-aired, sweet, cheerful, well-arranged and well-situated house exercises a moral as well as a physical influence over its inmates, and makes the members of a family peaceable and considerate of the feelings and happiness of each other; the connection is obvious between the state of mind thus produced and habits of respect for others, and for those duties and obligations which no law can enforce. On the contrary, a filthy, squalid, noxious dwelling, rendered still more wretched by its noisome site, and in which none of the decencies of life can be observed, contributes to make its unfortunate inhabitants selfish, sensual, regardless of the feelings of each other; the constant indulgence of such passions renders them reckless and brutal, and the transition is natural to propensities and habits incompatible with respect for the property of others or for the laws.

The Bible.—The Bible itself (as Professor Maclagan has said) is a standing and an astonishing miracle. Written fragment by fragment throughout the course of fifteen centuries, under different states of society and in different languages, by persons of the most opposite tempers, talents, and conditions, learned and unlearned, prince and peasant, bond and free; cast into every form of instructive composition and good writing—history, prophecy, poetry, allegory, emblematic representation, judicious interpretation, liberal statement, precept, example, proverbs, disquisition, epistle, sermon, prayer—in short, all rational shapes of human discourse, and treating, moreover, of subjects not obvious, but most difficult—its authors are not found, like other writers, contradicting each other upon the most ordinary of fact and opinion, but are at harmony upon the whole of their sublime and momentous scheme.

A squirrel sitting on a hickory tree, was once observed to weigh the nuts he got in each paw, to find out which were good and which were bad. The light ones he invariably threw away, retaining only those which were heavier. It was found, on examining those he had thrown away that he had not made a mistake in a single instance. They were all bad nuts. —*Woodsworth's Stories.*

The Sable.—This animal resembles the marten, and is found in great numbers in Siberia and Kamtschatka. Its fur is very valuable, and the Russian government derives considerable revenue from its sale.

LECTURE ON BURMAH.

BY THE REV. HOWARD MALCOLM, AT PHILADELPHIA.

Burmah, as is well known, lies on the east side of the Bay of Bengal, and extends as far as China. The population of Burmah is about six millions. It is seven hundred miles long, and four hundred wide. Burmah is decidedly the most influential portion of India. The government is an absolute monarchy; but the laws are good, and generally well executed. As you approach the seat of government, the country is in a good state of cultivation, while the more remote parts are much neglected. In fact, everything pertaining to the country, whether in the cultivation of land, or in the administration of laws, receives better attention in the immediate neighborhood of the seat of government, than in the remoter parts. In this respect, the conduct of the people is much like that of our slaves at the South. At the extremities of the country, every extortion is practiced. For example—if the King sends out a chief to get up a company of soldiers, that chief will draft those whom he thinks will be the least likely to go, and then lets them off only on condition that they pay a large sum, which the chief puts in his own coffers. Their armies are brave and well disciplined—so much so, that the British feared them more than any other army of India. Their navy is very poor, and is a more apology for one. They are a highly civilized people. They have good roads, canals, and commerce. A foreigner is very apt to judge of things by the rules to which he has been accustomed, and, in this way, forms a wrong estimate of their real condition.

Their is a peculiar feature in the division of their property. Occupation is possession. So long as a man keeps a good fence around his land, it is his, and he loses it as soon as he neglects this. Their land is not taxed; but the inhabitants are. They are not destitute of a literature. Books are numerous, and some of them very ancient. They are said to extend back many thousands of years; but we may be safe in saying that they date back as far as 600 years before Christ. They have a good system of common school education, and it may be safely said that there is not a man in the kingdom who cannot read and write.—The priests are compelled to teach the boys of an early age. The girls are neglected, and those only are educated, whose parents are able to defray the expenses of their education. There appear to be no restrictions imposed on the intercourse between the men and the women, as there is in many of the eastern countries, by degrading the women. There is a peculiarity, however, which would seem to place the women even higher than in this country—that is, that they always carry the purse. It would be considered a disgrace for a man to carry it. The result is, that, in that country, there are no bankrupts.

Their timber is of a very durable nature. The speaker had sailed in a vessel upwards of 90 years old. They export a great quantity of lumber. Their ivory is also of an excellent quality, and is an important article in their commerce. They raise the finest cotton in the world. Bird's nests are here used for making soup. The birds build them much in the same manner as the swallows in this country—attached to the side of some support. They make these nests out of their own bosoms; and so great is the demand for this savory dish, that these nests bring their weight in gold. Sharks' fins are also used for the same purpose. Both of these articles are the sources of great revenue to the King. The Chinese, being great epicures, create a demand for both dishes. In commerce, they charge their taxes in kind, so that this prevents any discussion in regard to tariff. Every tenth is taken as a tax. Silver and lead constitute the principal part of their currency. The silver is run into cakes, and change is made by cutting off small portions. After it has been run over a few times, it becomes deteriorated—and, when the price of an article is asked the venders will request that the silver be shown; and so good judges are they, that they will immediately tell the amount of alloy, and will raise the price on their merchandise.

The buildings of this country are very slight, and poorly fitted to keep out the thief; but stealing is not very common here. Bamboos and mats are their building materials. The buildings for worship are the most substantial they have. These are pagodas, and are constructed of solid stone or brick.

The Pyramids of Egypt are pagodas, in my opinion. Nothing but religion could ever have Influenced man to have erected such huge buildings. When a man makes a vow, he erects as large a pagoda as his means will allow. His son after him, perhaps, builds a larger one over his, and thus one succeeds another, until it becomes an immense building. This appears to be the way the Egyptian pyramids attained such a size.

Their pagodas and monsteries all are gilded over, and present a splendid appearance when the sun shines upon them. The people are very strict in regard to rank. This is indicated by the number of roofs on their houses, covers on their umbrellas, and followers that attend them. These attendants are all engaged in carrying something. One has the tobacco box, another the pen, a third the ink, and a fourth an umbrella.

The lecturer found a great deal of refinement among the ladies. They make holes in their ears and the size is in proportion to their rank. He had seen some as large as a silver dollar piece. The dress of both men and women is very becoming. They have neither seamstress nor tailors, but use the cloth as it comes from the loom. They wrap it about them and let it hang in large festoons.

They consider it a great disgrace to have white teeth, and they have a preparation for the purpose of coloring them black. The great aim among the ladies is to be fat, and to be lean they think is sure evidence that they are not well fed. They weave silk very beautifully and ingeniously. The Burmans have the power of smelting metals. They even transcend the Russians in the making of bells. He saw one that weighed eighty-five thousand pounds. It was twenty feet in diameter and one foot thick. He was told that there was in another part, two bells that weighed three hundred and thirty thousand pounds. They have very fine jewelry. Their music is poor and chiefly set in the minor key. They make their canoes even better than our Indians, and some of them are seven by sixty feet long. A great deal of their commerce is carried on by caravans. They have regularly educated doctors, which, with their free schools ought to give them in a great deal of notoriety. They have two schools of medicine, and they are respectively termed the diet and medicine schools. English walnut shells, ground up fine, enters very extensively into the prescriptions of the latter, One of these doctors told the speaker that there were sixty-five diseases in the human body, and he had a remedy for all. Just acquaint him with the disease, and then he could cure it. Sometimes it was very difficult to ascertain which it was, and in such cases he compounded all these cures and gave a dose of the mixture. They cure rheumatism by kneading their patients like women do bread. They do first with the soft palm of their hands, and then with their knuckles,

The white men in this country seem to have a perpetual struggle to keep the life in them. They rise in the morning and drive until the sun is about half an hour high, and then return and go to bed till ten o'clock, when they rise and take breakfast, after which they disperse until half an hour before sunset, when they take their second drive, and on their return take dinner, at which they sit for three, four, or five hours. Every drive is truly magnificent. At Madras you may see a thousand carriages out in the evening. These are the most delicious moments of a man's life-time to this country.

Newly-Invented Steam Engine.—We witnessed, a day or two ago, the trial of a newly-invented engine, which, we should say is destined to supersede that class of engines now in general use. The inventor is Mr. John Dodd, of West Flamboro' who has devoted much time to the study of mechanics. Were we at full liberty, we should hardly know how to describe it, so as to convey a correct idea of its simplicity and completeness. It differs, however, entirely from the common steam engine, both in principle and construction. The model we saw is estimated at one horse power, yet it seemed to us to accomplish with perfect ease what the common engines of double or treble the power are often engaged in; such, for instance, as driving a circular saw. Attached to the shaft was one of these, fifteen inches in diameter, and a piece of hard-wood plank was sawed into strips with the most perfect ease. Afterwards a much thicker piece of plank was placed on the platform, and we could perceive no difference in the velocity of the saw. The entire engine may be put in a box about the size of a common candle box, and is perfect within itself, requiring no other fitting than being to a common steam boiler. We understand that the inventor intends to have his engine patented both here and in the United States and in England; to which latter place he will proceed with a model for exhibition at the World's Fair in May next.—*Dundas Warder.*

Important Improvements in the Screw-propeller.—The *Morning Herald* says:—"Messrs, Maudeslay have fitted a new kind of screw propeller, to the *Bosphorus* the ship destined to be the precursor of the regular steam communication between England and the Cape of Good Hope; and the ship having been completed, was taken yesterday on a trial trip down the Thames as far as the measured mile in Long Reach, several of the parties interested being on board. At the measured mile the mean speed of 9½ knots, or 10 2-3 statute miles, with an easinesss of steering that was very remarkable, established most conclusively the triumph of the new principle. This improvement on the old propeller is termed Maudeslay's patent self acting feathering screw, which of itself assumes such a position that, when the ship is under canvas only the least possible amount of impediment is offered to its being drawn easily through the water; and when the ship is under steam-power, it again takes, spontaneously on the engine being put in motion, the right angle for propelling. In fact, to all intents and purposes, in form and reality, with this new screw, the vessel at the will of the navigator, is either the perfect sailing-ship or the auxiliary steam-ship, for the screw is so fitted, that when not required to propel the ship, it may be said to form a portion of the lines of the after portion of it. The important advantages of the new plan are almost self-evident, and when it is stated that it is constructed in competent parts, the improved facilities it affords for for stowage or repairing will at once be seen and acknowledged, and we venture to predict, will be generally adopted in all services in preference to those at present in use."

A Discovery of another property of chloroform has just been announced by two French gentlemen who simultaneously, and without any consultation with each other, found that chloroform is an *antisceptic* of marvellous virtue, preventing animal decomposition after death, or promptly checking it if already commenced. Muscular flesh and all animal tissues when subjected to its action, become fixed for a long period of time in the precise form and condition in which they may happen to be at the moment of application, and natural colors, even to the slightest and most delicate shades, are preserved without the slightest change. The French Academy of Science, about to make some further investigations to verify this remarkable discovery.

Assafœtida.—This article is obtained from a large umbelliferous plant growing in Persia. The root resembles a large parsnip externally, of a black color; on cutting it transversely, the assafœtida exudes in form of a white thick juice, like cream, which, from exposure to the air, becomes yellower and at last of dark brown color. It is very apt to run into putrefaction; and hence those who collect it carefully defend it from the sun. The fresh juice has an excessively strong smell, and grows weaker and weaker upon keeping; a single drachm of the fresh fluid smells more than a hundred pounds of the dry assafœtida brought to us. The Persians are commonly obliged to hire ships on purpose for its carriage, as scarcely any one will receive it along with other commodities, its stench infecting every thing that comes near it.—*Sci. American.*

THE WORLD—ITS POPULATION.

The *Tribune* closes a long article on the subject of Population with the following reflections:—

The point which it would be wise both in Europeans and Americans to note, however, is that precisely the same causes are operating on our side of the globe, as on the other, to overburden the land with population and to inaugurate extreme poverty and starvation as the permanent condition of society, unless the true issue of the dilemma is sought out. It is especially to be understood that this whole trouble is not the mere return of an old event, such as mankind is accustomed to, but that it is the occurrence of a new and untried contingence. During the early ages of human society causes were in existence of various kinds, among which the constant prevalence of wars was a prominent one to keep down the increase of population.

Peace, comparative prosperity, in a commercial and agricultural point of view, such as results from the enlargement of empire and the habits of civilization, and prior to the period of the general refinement and development of the race, furnish the conditions of a rapid multiplication of the human family. It is precisely in that condition that the world generally, now finds itself for the first time. Ireland during a period of 56 years, from 1785 to 1841, increased in population from 2,845,-932, to 8,466,000. France has increased since 1831 from 27,000,000 to 35,000,000. The United States has increased from 1790 to 1850 from 3,729,328 to 27,000,-000 or more. The average of these ratios is equal to the ratio of increase in China during the past 150 years.

The problem of the true solution of over-population is forcing itself upon us. Let those who dare, take the responsibility of deferring it by staving off in this age, under any pretext, religious moral, or political, the most profound and radical investigation of the whole social question.

The Railways of the World.—One of the most surprising circumstances attending the creation of railways, is the amount of capital which, within a limited period, has been expended in their construction and equipment. According to the calculations supplied in the work before us, there were in operation at the commencement of 1849, in different parts of the globe, a total length of 18,696 miles of railway, on which a capital of £368,567,000 had been actually expended. Besides this, it is estimated that there were at the same epoch, in progress of construction, a further extent of 7,829 miles, the cost of which when completed, would be £146,750,000! Thus when these latter lines shall have been brought into operation, the population of Europe and the United States (for it is there only that railways have made any progress) will have completed, within the period of less than a quarter of a century, 29,485 miles of railway ; that is to say, a greater length than would completely surround the globe, at a cost of above five hundred millions sterling! To accomplishh this stupendous work, human industry must have appropriated out of its annual savings twenty millions sterling for twenty five successive years! Of this prodigious investment tne small spot of the globe which we inhabit has had a share, which will form not the least striking fact in her history. Of the total length of railway in actual operation in all parts of the globe, twenty-seven miles in every hundred, are in the United Kingdom! But the proportion of the entire amount of railway capital contributed by British industry is even more remarkable. It appears that, of the entire amount of capital expended on the railways of the world, fifty-four pounds in every hundred ; and of the capital to be expended on those in progress, sixty-eight pounds in every hundred, are appropriated to British railways!—*Dublin University Magazine.*

National Music.—The Russians and Danes are rich in possession of an original and most touching national music; Ireland. Scotland, and Wales, are alike favoured with the most exquisite native melodies, probably in the world. France, though more barren in the wealth of sweet sounds, has a few old airs, that redeem her from the charge of utter sterility. Austria, Bohemia, and Switzerland, each claim a thousand beautiful and characteristic mountain songs. Italy is the very palace of music; Germany its temple. Spain resounds with wild and martial strains: and the thick groves of Portugal with native music of a softer and sadder kind. All the nations of Europe—I presume those of all the world—possess some kind of national music, and are blessed by Heaven with some measure of perception as to the lovliness of harmonious sounds. England alone, England, and her descendent, America, seem to have been denied a sense, to want a capacity, to have been stinted of a faculty, to the possession of which she vainly aspires. The rich spirit of Italian music, the solemn sound of German melody, the wild free Euterpe of the Cantons, have in vain been summoned in turns to teach her how to listen; tis all in vain —she does listen painfully, she has learnt by dint of time, and much endurance. the technicalities of musical science; she pays regally her instructors in the divine pleasure; but all in vain: the spirit of melody is not in her, and spite of hosts of foreign musicians, in spite of the King's Theatre, in spite of singing and playing young ladies, and criticising young gentlemen, England, to the last day of her life, will be a dunce in music, for she hath it not in her; neither—or I am much mistaken — hath her daughter.—*Fanny Kemble.*

A New Light.—The Scientific American has a letter from George Cadwallader Blaney, Fort Washita, Arkansas, stating that he has discovered, and applied for patents, in this country and Europe, for a mode of making a cheap brilliant gas, produced upon a new and scientific principle, which can be obtained at a cost less than one cent per thousand feet. Mr. Blaney says the process will far surpass every other means of producing gas extent ; neither will the material raise in value on account of an increased demand. During the process, another article, more valuable than the gas itself, is produced. Neither is there required, during the operation, a single particle of wood, coal, water, or vegetable matter, and the material can be obtained in any climate or place, however remote from civilization.

A Natural Fountain or Spouting Spring.—A California correspondent of the Family Visitor gives some interesting sketches of scenery and incidents of his travels from St. Joseph across the plains to California. Among other things, he mentions a spouting spring.

After describing what are known as the Soda Springs, he says: Two miles further on, at the left of the road, ("Bear river,") are the *Steamboat Springs*, so called from the puffing, hissing noise, accompanying the discharge of the water. The principal spring is situated in the centre of a circular flat rock, about eight feet in diameter. The rock is elevated but a little above the surface of the river, which runs in a circular form about two-thirds around the rock. The water spouts up through an orifice in the rock, about three inches in diameter. It spouts up, as it were, by regular pulsations, in the form of a milk white foam to the height of about eighteen inches, like water boiling violently over a very hot fire. It also emits steam, and at every pulsation produces a hissing noise.

The water is hot and impregnated with soda like the water of the soda springs. A white man, living among the Shoshone Indians, whose lodge is three-fourths of a mile from Steamboat spring, informed us that the hissing or puffing sound varies in loudness with the height of the surrounding water. He said that when the water is highest, he could distinctly hear it at his lodge.

To prevent the attack of the "Onion Grub."—The growth of the onion is frequently prevented and the plant sometimes destroyed by a worm which attacks it as soon as it appears above ground. A correspondent of the *Gardener's Chronicle* states that he has applied nitrate of soda with good effects in preventing the ravages of this insect. He used half a pound of the salt to a gallon of water, and applied eight gallons to a bed of ten yards in length. He states that it checked the progress of the worms, and the crop turned out well.

Fried Potatoes.—The French method of cooking potatoes affords a most agreeable dish. The potatoes are peeled, piped, and cut into thin slices, then thrown into a frying pan containi g an abundance of hot lard. As soon as they become brown and crispy they are thrown into a collander to drain, then sprinkled with salt, and served up as hot as possible.

HOW TO MISMANAGE A GARDEN.

From a series of chapters in London Agricultural Gazette, on the above named subject, we select the following sarcastic directions as adopted by the mismanager in the use and application of water:—

Water is not an uncommon source of profit to the mismanager. It is quite astonishing, indeed, how easily this element may be made to assist in spoiling a garden.

Foolish people say that it is a part of the food by which plants exist, and it requires to be administered with care, skill, and discretion. But your geniuses are not to be bamboozled by fine names, or what the world believes to be authority. They know better. How, indeed, can anything be fed on water? Can a man, or a horse, or a sheep? Even a goose on a common won't live on water, but must have grass. How, then, should a plant? The opinion of the mismanager is decidedly that water is of no other use than to moisten the soil, and therefore, he keeps his soil as wet as he can.

He has also his own ways of applying it. When he waters the plants in his borders, he gives them "just a sprinkle," by holding the watering can high, and allowing the drops to dash on the ground "quite natural like." By repeating this operation once a-day, he will by degrees bring his ground to a nice hard surface, so as to keep in the heat, and be easily raked. It is true that hard, hot ground is not favorable to the admission of water; but, then, it has the advantage of looking well; and besides, if water is poured on it, somewhere or other it must go, and it will be sure to to find its way to the roots—if it does not find its way to the gravel walks or a neighboring ditch.

In like manner, if plants are in pots, they should be deluged overhead, from a coarse-rossed watering can. When you see the water running out of the hole in the bottom of the pot, you can be under no mistake that plants have had enough. It is true a good deal of soil and other matters run out of the pot along with the water; but that is of no consequence; there is the more room in the pot for a further supply of water. It is true that little or no water remains in the pot, the ball of earth being too hard to receive it; but that also is of no importance, because it is so easy to water it again.

Some people, on the other hand, soak their potted plants very gently, and when the ball of earth has taken all it can, they then remove it carefully from the water. But that is troublesome, takes up a great deal of time, slops a man's legs, and is merely a fancy of folks who pretend to be wiser than their neighbors.

Another method to be particularly recommended, is, to water trees in the open ground, by pouring down water at the foot of the stem. The man who has genius for mismanagement knows the advantage of that.—Water is to moisten roots; the biggest roots at the foot of the stem; therefore water should be applied to the foot of the stem. It must be owned that the advantage of the practice is not apparent, unless a heavy storm of rain should fall immediately afterwards; but as the reasoning is correct the practice must be right.

It will be evident that the plans of the mismanager are far more judicious than those of the man who contrives to irrigate his beds by turning a gentle stream over them. If it were only because so much labor is saved by irrigation, such a Frenchified way ought never to be adopted. It is just as absurd as that plan of warming water in tanks artificially heated or exposed to the sun, before using it. Who would drink luke-warm flat water, if he could get fresh and cold from a deep well; and why should a plant like it? As to warming it by hot-water pipes, that is about the silliest scheme of the modern pretenders to a knowledge of gardening. A laboring man might as soon think of washing his face and hands in warm water. Besides, plants cannot feel. If you ask our friend, the genius, whether he does not think that warm water would agree better than cold with a laborer in a violent perspiration, or who had been stewing all day in a hot-house, he triumphantly enquires whether a plant is a man. It may be true that tropical plants come from countries where cold water is unknown; perhaps they do; perhaps they don't. At any rate the mismanager will teach them how to bear it; and it cannot be denied that to harden plants is an object with all real gardeners.

Never have a syringe? It only throws water on leaves; but where is the advantage of moistening leaves. Even if plants did feed on water, they would not feed by their leaves. You might as well put a man's roast beef under his arm pit and expect him to fatten by it. Still more repugnant to all the mismanager's ideas is the foolish habit of syringing the walls and brick paths of a greenhouse. What is the use of that? What good can it do a plant to throw water on a brick wall not within a yard of it? No, no; keep the footpaths dry and nice to walk upon; keep the walls dry too—(if you do not they are very likely to be covered with "green,") and then you will make things comfortable. If you do employ a syringe be sure to use it most when vines are in flower, and afterwards when they are in fruit; and in the greenhouse, first when the flowers are opening, and next when the wood is ripening. When they are making their growth it is of no consequence.

BONES AS MANURE.—The use of bones as manure was commenced in England, about 1776. It was then common to apply from 60 to 70 and even 100 bushels to the acre—they being coarsely broken by hammers. Experience has proved however, that so large a quantity does not produce effects in proportion, and 10 to 12 bushels are now thought to be sufficient in most cases. The annual value of bones used in England for manure, is estimated at £880,000 or $4,400,000.

PHOSPHATE OF LIME.—We learn from Dr. E. EMMONS that an inexhaustable supply of this article has been discovered on the west shore of Lake Champlain, at Crown Point. A considerable quantity of it was quarried last autumn, some of which has been examined by Dr. E., and also by Prof. NORTON, and has been found to contain from four to five per cent of phosphate. It may be prepared for use as manure, either by being ground in a mill, after the manner of grinding plaster, or it may be burnt, like lime. It is harder than plaster, and would require more force in pulverizing. When burnt, it readily falls to powder.

It will be recollected that the use of phosphate of lime has been attended with highly favorable results in some parts of Europe, particularly on old pasture grounds, and such as have been much devoted to grain crops, which have been exhausted of their phosphates. We trust that accurate trials of this article will be made the coming season, in comparison with bones and other manures, for various crops and on various soils, and that the results will be given to the public. Farmers will then have some criterion by which they may determine its relative value, and the expediency of purchasing it as a manure.—*Cultivator.*

Average Products of an English Farm.—The following are the averages of some of the products of a farm of 740 acres near Brighton, England, occupied by Wm. Ridgen. He has 250 acres of wheat, averaging 26 bushels per acre; 40 of barley, 40 bushels; 60 in oats, 60 to 80 bushels; 240 acres in clover and grasses, two tons hay. He keeps 350 South Down ewes, which average yearly about 400 lambs; average quantity of wool yielded by the flock, four pounds per fleece, and it sells at 25 cents per lb. He keeps 21 cows, which yield on an average ten quarts of milk per day, the year round.

Height of Lightning Rods.–It has been laid down as a rule, derived from experiments made in France, on the conducting power of lightning-rods, that a rod will protect a circle whose radius is equal to twice the height of the rod. Prof. Loomis, of New-Haven, states that he has heard of a case where a pile of shavings were set on fire by lightning, at the distance of one hundred feet from a lightning rod of fifty-nine feet in height. From this case Prof. L. concludes that it is unsafe to rely upon a rod to protect a circle whose radius is more than once and a half the height of the rod.

Standard for the Shape of Fowls.—At the late exhibition of poultry at Boston, a well known gentleman, who had carefully examined the different kinds of fowls, observed: These long-legged, thin breasted chickens will never answer for the table. I speak from forty years' practice in *carving*. I have formerly had them, sometimes, on my table, but have grown wise by experience, and will have no more of them. To say nothing of the poor quality of their flesh, their shape is not right. For instance, if I have a pair of such chickens, and there are half a dozen ladies at table, each chooses a piece of the breast, and there cannot be enough cut from that part to serve round; but if I have a pair of partridges (ruffled grouse,) though they may not weigh more than half as much as the chickens, I can readily take a slice from the breast for each guest. The patridge, then, should be the standard for the shape of fowls; and besides the advantage alluded to, it will be found in general, that the nearer this form is approached, the better will be the flesh, and the greater the quantity in proportion to the bone.—*Cultivator.*

Transporting Seeds.—The Chinese method of packing seeds for distant transportation, is to put them in small bottles, with the ashes of rice chaff. They allege that if this be omitted, small maggots are hatched during the voyage which destroy the seed. This ash or an other, if not too strong, we presume acts in two ways; 1st, as an absorber for any moisture which may be present, and 2nd, as an alkali to destroy the latent eggs or larvæ of any insects.

A New Building Material has lately been introduced into Pottsville, Pennsylvania. It is a brick fifteen by thirty inches, so made as to promise almost equal durability of stone, at one third the cost.

Grape Cuttings should never be planted in an upright position as they are not one tenth part so likely to grow, as when laid horizontally.

Value of Vanity.—Franklin says—"Most people dislike vanity in others, whatever share they have of themselves, but I give it fair quarter wherever I meet with it, being persuaded that it is often productive of good to the possessor, and to others who are within his sphere of action; and therefore, in many cases, it would not be altogether absurd a if man were to thank God for his *vanity*, among the other comforts of life."

Method of Curing Prize Hams.—The hams of Maryland and Virginia have long enjoyed a wide celebrity. At the last exhibition of the Maryland State Agricultural Society, four premiums were awarded for hams. We are informed by those who had the opportunity of examining them, that they were of first rate quality. The following are the recipes by which the hams were cured:

T. E. Hambleton's Recipe.—1st premium. To every 100 lbs. pork, take 8 lbs of G. A. salt, 2 oz. saltpetre, 2 lbs. brown sugar, 1½ oz. of potash and 4 gallons of water. Mix the above, and pour the brine over the meat, after it has laid in the tub some two days. Let the ham remain six weeks to brine, and then dried several days before making. I have generally had the meat rubbed with fine salt when it is packed down. The meat should be perfectly cool before packing.

J. Glenn's Recipe—2nd premium. To 1000 lbs. of pork, take half a bushel and half a peck of salt, 3 lbs. saltpetre, 3 lbs. sugar, and 2 quarts of molasses. Mix—rub the bacon with it well; keep on for three weeks in all, but at the end of nine days take out the hams, and put those which were at the top, at the bottom.

R. Brooke Jr.'s Recipe—3d premium. One bushel fine salt, half bushel ground alum salt, one and a half pounds saltpetre to the thousand lbs. pork, left to be in pickle 4 weeks, hung up and smoked with hickory wood until the rind becomes a dark brown.

C. D. Slingluff's Recipe—4th premium. To 100 lbs. Green Hams, take 8 lbs. G. A. salt, 2 lbs. brown sugar or molasses equivalent, 2 oz. saltpetre, 2 oz. pearl ashes, 4 gallons water, dissolve well, skimming off the scum arising on the surface. Pack the hams compactly in a tight vessel or cask, rubbing the fleshy part with fine salt—in a day or two pour the above pickle over the meat, taking care to keep it covered with the pickle. In four to six weeks, according to the size and weight of the hams, (that is to say, the longer period for heavy hams,) hang up to smoke, hock up; smoking with green hickory wood. I have put up hams for the last 12 or 15 years by the above recipe with uniform success, equal at all times to the sample now presented.

To the above we add the following, which we, as well as many others, have satisfactorily proved:

For every one hundred pounds of meat, take five pints of good molasses, (or five pounds of brown sugar,) five ounces saltpetre, and eight pounds rock salt—add three gallons of water, and boil the ingredients over a gentle fire, skimming off the froth or scum as it rises. Continue the boiling till the salt, &c. is dissolved.—Have the hams nicely cut and trimmed, packed in casks with the shank end down, as the pickle will thus strike in better. When the pickle, prepared as above, is cooled to blood heat, pour it over the hams. They may lie in pickle from two to six weeks, according to the size of the pieces, or the state of the weather, more time being required in cold, than in warm weather. Beef or mutton hams, intended for smoking and drying, may be cured according to this mode, and will be found excellent.

Much of the goodness of hams depends on smoking. They should be hung at such a distance from the fire, as not to be heated. They should also be hung up with the shank end downward, as this will prevent the escape of their juices by dripping. Small hams, wanted for immediate use, will answer with two weeks' smoking, but larger ones, and those wanted for keeping, should be smoked four weeks or more.

THE HOME CIRCLE.

We turn again to the pure hearts and the gentle affections that welcome us home. What a contrast? What a change comes over the weary spirit? How the feelings soften in unison with the cheerful scene that greets the eye, and in sympathy with the bright faces that look up to you in joy and gladness? And then the many welcomes that fall upon your ear from innocent lips that never yet have practised guile or flattery! What a contrast, we say again, with the cares, the doubts, the apprehensions you have just closed the door upon?

But we fear it is not always so. The door, it is true, is closed behind us, but, alas! it does not always shut out those evidences of a ruffled temperament which bring sorrow and disappointment to the lovely group within. Nay, it is not always possible for men to shake off all the sober reflections of the day at once, and to appear in the full tide of animation. The incessant claims of business have almost exhausted the mental and physical energies. Labour and anxiety have, indeed, triumphed over all the energies of manhood, but not over all the affections of the heart; and so long as these have been sustained free from entanglements or contamination, those triumphs must necessarily have only a brief duration. The bright faces, the soothing and endearing exclamations, the quiet comforts of home soon dissipate all the clouds that lowered o'er the brow of care. The heart receives a new impulse, which soon glows on the cheek, and sparkles in the eye.—The feelings are at once invigorated, the thoughts and memories of pleasant places, and the hopes and anticipations of youth are all renewed and happily realized. The spirit itself mounts higher, and overflows with gratitude to Heaven for all its blessings. The world and all its cares are shut out; the door is secured and barred against them all, and virtue, love and affection are secure in the enjoyment of a happy home!

Then, let us all be careful how we estimate the joys and the pleasures of the home circle. It is there only that grief is assuaged. There only does sorrow find a true comforter. There only are disappointments incident to a life of business alleviated for there only do we find those cherished sympathies, whose tones are as the melodies that float from the harps of angels.

SOCIAL CUSTOMS IN HOLSTEIN.

Few American readers probably know much about the duchy of Holstein, beyond what they learn by the frequent allusions in European news to the war which has for some time been carried on between that duchy and Denmark the following brief description of some of the domestic customs of the Holsteiners, which we find among the foreign correspondence of the New York *Independent*, will perhaps tend to increase our interest in this people, and in the contest they are waging with the Danes.

The whole life here has something extremely generous, and almost patriarchal, about it. When we meet in the morning at "morning coffee," we all shake hands as if we had been to a distant country, and wish each other almost solemnly the morning salutations. Every one pays great deference to the father, a simple, dignified old man; and the *Bauer* come up constantly to the house as though they were members of the family, for his advice and assistance. And as I walked over the farm, I could not but be most pleasantly struck with the politeness of all of them to him, and his to them. We meet again about eleven for the breakfast, a more formal meal. Here, as nearly every where in Germany where thanks are offered at all at a meal, it is done *in silence*. And I must say that it has a much more solemn effect than the hurried, careless form, so prevalent with us. It is very difficult for most persons to preserve *the life* in words so often repeated, or to invent new words for each occasion; but in these few moments of solemn stillness *thoughts* can be breathed which are real prayer.

After this morning meal comes the principal business of the day; and in this family, as in most of the families of Germany, whether in city or country, the ladies do the principal part of the house-work. Again, in the middle of the afternoon, we meet at the great meal of the day, the dinner. This is a long, social meal, with a strange variety of dishes, which I will not venture to enumerate. After it is over we all rise and shake hands, with the words, "*Gresnet die Mohlzeit*," (blessed be the meal!) in quite a serious manner. In the beginning of the evening again, tea and biscuit; and at the end another hearty supper of meats, &c.

This arrangement of meals, so common in Germany, is rather surprising at first to an American, and quite upsets all his previous theories of dietics. The Germans, however, appear to bear up under it very well.

Doctor's Visits.—It is not only for the sick man, but the sick man's friends that the doctor comes. His presence is often as good for them as for the patient, and they long for him yet more eagerly. How we have all watched after him! what an emotion the thrill of his carriage wheels in the street, and at length at the door, has made us feel! How we hang upon his words, and what comfort we get from a smile or two, if he can vouchsafe that sunshine to lighten our darkness! Who hasn't seen the mother prying into his face, to know if there is hope for the sick infant that cannot speak, and lies yonder, its little frame battling with fever? Ah, how she looks into his eyes! What thanks if there is light there: what grief and pain if he casts them down, and dares not "hope!" Or is it the house-father who is stricken. The terrified wife looks on, while the physician feels his patient's wrist, smothering her agonies, as the children have been called upon to stay their plays and their talk. Over the patient in the fever, the wife expectant, the children unconscious, the doctor stands as if he were fate, the dispenser of life and death; he *must* let the patient off this time, the woman prays so for his respite! One can fancy how awful the responsibility must be to a conscientious man; how cruel the feeling that he has given the wrong remedy, or that it might have been possible to do better; how harassing the sympathy with survivors, if the case is unfortunate —how immense the delight of victory!—*Pendennis.*

A Horse Story.—The following story is vouched to us by first rate authority as fact. A valuable horse of the Canadian breed, belonging to Josephus Baldwin, Esq., on one of the slippery days last week, had much difficulty of maintaining his *standing* in society, owing to the smoothness of his shoes, and came to some little bodily harm in consequence. When he was unharnassed, the teamster left him to his head, not doubting that he would go directly to the stable, as he always did, Instead of doing so, however, he passed by the stable, and went directly to the blacksmith shop of Vincent & Woodward, where he had been shod some months before. He was found there patiently "waiting his turn," with several horses, as every well bred

horse does. What was that, if it was not reason?—*Nashua Telegraph.*

THE WITCHCRAFT OF WOMAN.—I want to tell you a secret. The way to make yourself pleasing to others is to show that you care for them. The whole world is like the miller at Mansfields, "who cared for nobody—no not he, because nobody cared for him." And the whole world will serve you so, if you give them the same cause. Let every one, therefore, see that you do care for them, by showing them wheat Sterne so happily calls, "the small sweet courtesies of life," those courtesies in which there is no parade, whose voice is too still to tease, and which manifest themselves by tender and affectionate looks, and little kind acts of attention—giving others the perferance in every little enjoyment at the table, in the field, walking, sitting, or standing. This is the spirit that gives to your time of life and to your sex, their sweetest Charm. It constitutes the sum total of all the witchcraft of woman.—Let the world see that your first care is for yourself, and you will spread the solitude of the upas tree around you, in the same way, by the emanation of a poison which kills all the juices of affection in its neighbourhood. Such a girl may be admired for her understanding and accomplishments, but she will never be beloved. The seeds of love can never grow but under the warm and genial influence of kind feelings and affectionate manners. Vivacity goes a great way in young persons. It calls attention to her who displays it; and, if it then be found associated with a generous sensibility, its execution is irresistible. On the contrary, if it be found in alliance with a cold, haughty, selfish heart, it produces no further effect, except an adverse one. Attend to this, my daughter. It flows from a heart that feels for you all the anxiety a parent can feel, and not without the hope which constitutes the parent's highest happiness. May God protect and bless you—*William Wirt to his Daughter.*

QUIZZING.—In conversation avoid a practice, which I am sorry to see now-a-days beginning to gain ground in many circles which assume the title of select. I mean that of quizzing. It is a ridiculous and rude habit; therefore avoid it. You will gain no friends by ever having recourse to it in society for any object, and you are sure to lose many. Nay, I have even known bitter enmity excited thereby. Never become too intimate with a man who is characterised by this fashion. Depend upon it, he can have very little fine or gentlemanly feeling about him.—If you on any occasion happen to be made the object of a quizzical attack, however strong the temptation may be, do not answer the offender in his own strain; but give him a decided token of a disapproval, at the same time without losing your temper. If, as has been the case with myself, you have the misfortune to meet with one the gentle sex who prides herself on her quizzing abilities, of course you must not forget yourself so much as to betray your annoyance even by a look. Laugh it off, and think very little of her. That's all you can do.

A SCIENTIFIC HATCHING MACHINE.

A Hatching Machine has been invented in France, by Mr. Vallee, which is described by the Paris correspondent of the Intelligencer. A drum enclosing a warming cylinder forms the basis of his system. He introduces warm air into the drum in which the eggs are deposited, and by circular openings gives access to currents of cold air. It is by the distribution and vigorously rational combination of warm and cold air that he obtains that dampish temperature in which lies the secret of incubation, from which results the development of the embryo in the egg. By this instrument artificial hatching is successfully carried on in every state of the atmosphere and at all seasons. But after the burst of the shell, a mother must be provided for the young. M. Vallee's ingenuity thus provides for this emergency. A lamb skin is fastened by one extremity to a plank, and made to open at the other like a pair of bellows. This affords a cover for the little ones and keeps them warm as would a veritable mother hen. The result of M. Vallee's experience touching the period of incubation necessary for the various species of eggs is curious and worthy of record. Here it is—Chickens, 21 days; partridges, 24 do.; pheasants, 25 do.; guinea hen, 25 do.; common duck, 28 do.; peafowls, 28 do.; barbary ducks, 30 do.; geese, 30 do. The degree of heat required is from 40 to 50 degrees French or Centigrade scale, equal to from 104 to 122 Farenheit. A small lamp of the Locatelli system suffices to raise the temperature of the apparatus to the proper elevation.—With such a machine every farmer could have a fine supply of fowls.—*Scientific American.*

GOOD PROPERTIES AND VIRTUES OF MILK.

An experienced physiologist and chemist declares milk to be a most perfect diet. There is probably nothing better adapted to our sustenance: containing curd casein, which is necessary for the development and formation of muscle—butter for the production of an adequate supply of fat—sugar to feed the respiration, and thereby add warmth to the body, the phosphates of lime and magnesia, the peroxide of iron, the chlorides of potassium and soda, with the free soda, required to give solidity and strength to the bone—together with the saline particles so essentially necessary for other parts of the body. It contains lactic acid, or the acid of milk, which chemists informs us is the acid of gastric juice, so requisite for the proper dissolving of our food in the stomach. It is therefore, obvious that milk should be chemically correct in all its constituent and that its beneficial effects on the constitution should not be neutralized by adulteration. It is, Dr. Prout properly says, the true type of all food. How necessary, therefore, it is that it should be pure; otherwise, this wonderful and wise provision of Providence will be a curse rather than a blessing.—*Ex.*

TO FATTEN FOWLS.—The best food for fattening fowls is potatoes mixed with meal, Boil the potatoes and mash them fine while they are hot, and mix the meal with them just before it is to be presented. They fatten on this diet in less than half the time ordinarily required to bring them to the same condition of excellence on corn, or even meal itself

Horseback Riding in Madeira.—The Hon. John A. Dix, in his recent work, "A Winter in Madeira," gives an amusing account of horseback riding at Funchal. For thirty cents an hour a fine horse can be hired at any livery stable, together with a man as attendant, who follows on foot; and when you desire to ride fast, he catches hold of your horse's tail and is drawn along. In this way he prevents you from running away from him. Mr. Dix says that the horses soon become accustomed to the human appendages, and that the fellows have a way of making the horses go fast or slow, as they desire, in spite of the rider.—Mr. Dix says that for ladies this association of horse and driver is a great convenience. They need no other attendant. He is always ready to render any assistance; if the horse loses a shoe, he has a hammer and nails in his pocket to replace it. It is not easy to fancy a more ludicrous spectacle than a lady riding through the city at full gallop, with a man hanging to the tail of her horse; but such scenes are of hourly occurrence in Funchal, and the eye soon becomes accustomed to them.

Swapping Horses.—Think twice before trading off a horse that has served you well on the whole, though he may have some fault. We have known men to swap off horses that had but one or two faults, for others that had a dozen. This generally arises from the bad temper of the owner. A horse refuses to draw before oxen, and he is put off for one that is not willing to draw anywhere. Another is high spirited, and the women can't drive him; he is put off for one that cannot be coaxed out of a walk. Another is not willing to be caught in the pasture; he is exchanged for one that is worthless when caught.

A low horse that hardly keeps your feet from the ground, is put off for one that you cannot mount without a block. A lazy horse is put off for one that has no patience to let you be seated in the chaise, before he must go.

On the whole, we would not advise farmers to think of changing off any of their stock for slight faults; whether cattle or horses, or children or wives. It is better to bear with them, than to run the risk of faults they know not of.—*Bloomington Herald.*

Thomas a Becket, Archbishop of Canterbury, was murdered before the altar of his own cathedral, 1171. He was made chancellor to Henry II. in 1158, and soon after elevated to the see of Canterbury; but he quarrelled with the king, was impeached, and his haughtiness and obstinacy finally led to his murder by four of the royal courtiers, though without their master's knowledge. The assassins fled, and to expiate their crimes, made a pilgrimage to Jerusalem, where they died. The news of Becket's death alarmed the king, who not only expulcated himself before the pope, but performed penance at the shrine of the murdered priest, and not only passed the night on the cold pavement in penitence and prayer, but suffered himself to be scourged by the monks. The spot was visited by thousands with religious awe, and the shrine of Becket was adorned with whatever was most costly and rich in the kingdom. Becket was cannonized by the Pope in 1172.

Time is Money.—When we change a dollar, the dimes and half dimes escape as things of small account; when we break a day by idleness in the morning, the rest of the hours lose their importance in our eyes. As time recedes, eternity advances. How solemn the thought, how prudent the advice:—Improve time, and prepare for eternity!

Best Rooms.—Among all the follies prevalent in the middle classes, that of sacrificing family comfort and convenience to the absurd desire of having a best room is one of the most ridiculous. Let it not be inferred that we consider good furniture, elegant curtains, and handsome carpets, as superfluous luxuries for people in plebeian state—far from it. Consistent taste and prudent display are to be as much admired in the house of a commoner as in the saloons of a nobleman; but when a room is set apart in a small domicle as the mere receptacle of company, and all in that room held sacred to tright ceremony and ostentatious pretensions, when chairs are cased in Holland jackets, and the carpet puts on its pinafore of the same material for months together, when the apartment is literally shut up,—indicating that family comfort lies dead within it,—then may the best rooms be condemned as worse than useless. For our own part, we think there is something perfectly terrifying in being asked into a stately drawing-room—the polished bars shining with unnatural brightness—the fire-irons arranged in stiff angles, evidently never appropriated to their purpose—the table most geometrically studded with glossy unread volumes of rubbish, and the besilked and betasselled sofas looking as if they were intended for anything but sitting on. We give an involuntary shudder as we are left to gaze on costly chimney ornaments and japanned screens, while the lady of the house is, most probably, making a rush to execute the metamorphose of dress and cap. We would much rather have been introduced to the common parlor, where we should have beheld some signs of vitality, and thawed ourselves into a good-humored cheerfulness; but then and there we might have beheld a basket of stockings and socks undergoing the process of repair, the young ones might have been lugging the chairs about, and left a tailless horse and a wheelless cart in the foreground; we might have formed suspicions that bloaters have been among the matin condiments; and oh, most dire of all! we might have found the mistress in a somewhat rumpled morning wrapper, and a "fright of a cap." Still we should greatly prefer the risks of breaking our neck over Noah's ark, sitting down on a heap of undarned hose, and encountering a fifth rate head gear, to the petrifying, spirit-damping fifteen minutes we are sentenced to sit in the "best room." The children, if there happen to be such humanizing things in the establishment, look on the walls with a sort of religious awe. They never "play" in the "best room," they never dream of clutching at the splendid bell-rope; they never have the most remote idea of making Lord Mayors' coaches of the embroidered foot-stools, and never think of playing at "bo-peep" behind the richly fringed damask drapery; they never dare to speculate as to whether, with a stout pin, they could pick out the eyes of the queer little man on the Indian card box; mirth and mischief are thoroughly mesmerized, and the little darlings sit or stand as though their life-tide had been suddenly manufactured into the "best starch."—And let us confess, that we experience no inconsiderable sense of misery ourselves in such a situation. It may be that a trace of gipsy blood is in our veins, or that some natural disqualification for "gentility," equally ignoble, marks us, but we are certainly never quite comfortable in a room that is only occupied on "grand occasions."—*Eliza Cook.*

Editor's Notices, &c.

BOARD OF AGRICULTURE—EXPERIMENTAL FARM, &c.

A printed circular signed by the President of the Provincial Agricultural Association was addressed, the latter end of December, to all the *County* Agricultural Societies in Upper Canada, relative to the election of the Board of Agriculture. If in any case this circular should have failed in reaching its proper destination, the Secretary requests to be informed of it, that the omissions may be supplied immediately.

The Secretaries of Societies will please to notice that these returns are to be addressed, according to the terms of the Statute, to *The Hon. Jas. Lesslie, Provincial Secretary, Toronto.*

We have received several communications from intelligent and influential agriculturists in different parts of the Province, containing hints and useful suggestions, in reference to the proposed Board, Experimental Farm, &c. It is gratifying to observe that this movement is so well received by them, who are the best qualified to judge of its real merits, and to direct it into beneficial channels. A. M. is informed, that to the best of our information and belief, "*Party Politics,*" will not be allowed to influence, in the least, the election of the Board; or any appointments that may be made in connection with it, and the proposed Experimental farm. These are matters which all people of common sense regard as *neutral* ground; and in their results, the common welfare of all parties is equally affected.

We may embody some of the suggestions and remarks with which we have been favored in an article for our next number, and we could wish our correspondents permision to use their names. With regard to the personal allusions to reference to the professorship of Agriculture, in the University, a sense of delicacy will only permit us to say, that we fully appreciate the worth of their good opinion and wishes.

GRANTS TO THE AGRICULTURAL ASSOCIATION OF UPPER CANADA.

The Secretary has received official information of the following grants for 1851. County of Middlesex Agricultural Society £25. County of Norfolk Agricultural Society £20. We believe that other Societies will not be backward in following the example, and that our great Provincial Exhibition to take place this year at Brockville, will be again supported in a creditable and efficient manner.—Our motto must be *onwards.*

IMPORTANT SALE OF LIVE STOCK.

Mr. Nathaniel Davis, of Yonge Street, near this city, will dispose of a large portion of his well known, stock by public Auction, on the 19th of March next. Among the list are to be found the following Entire Horses:—"Cock of the Rock;" "Young Magnum Bonum;" "Perfection;" "Hercules;" Colts, &c.; with some well bred Durham Cattle, &c.; presenting to purchasers an opportunity rarely to be met with.

CANADA; PAST, PRESENT AND FUTURE.—By W. H. Smith. Toronto, Thos. Maclear, 45 Yonge Street.

We have received the 2nd part of this publication and well does it sustain the high and useful character which we felt it to be our duty to pronounce, when noticing the first part. The printing and getting up of the work is highly creditable to our native skill and industry; and affords another pleasing proof that art and literature are fast advancing among us. The present part contains a neatly engraved map of the Counties of Peterborough, Durham and Northumberland and embraces very full information on the Counties of Norfolk, Lincoln, Haldimand and Welland; beside a very useful appendage, the commencement of a business Directory for Canada West. No extracts, for which we have space, could give any but an imperfect idea of the character of the work, as a whole, and all who desire to understand the real condition and capabilities of Upper Canada, should at once procure it. They could not do better, after reading themselves, than to send it to their friends in the old country, who would then possess the latest and most reliable information, relative to the condition and prospects of this important department of England's wide spread dominions. The work possesses the additional recommendation of cheapness when the labor and expense of getting it up are considered; and it can be procured periodically either in single numbers or parts, from any of Mr. Maclear's travelling agents.

THE FARMER'S GUIDE.

We have received from Mr. Rowsell of this city, the 13th number of this publication, which abounds in solid practical information, for the use of the farmer. The present number contains full details of turnip culture and other root crops; illustrated by very accurate cuts of machines, insects, &c.

RECEIVED.—The 4th and 5th Parts of Morton's Cyclopedia of Agriculture.

MR. JOHN DIXON the Agent for the *North American* Newspaper, has our authority to act for the *Agriculturist*, West of Toronto.

TORONTO MARKETS.

AGRICULTURIST OFFICE, Feb. 6.

Our Market to-day presented an animated appearance every description of produce coming in freely, and prices rule higher than for the last week. Wheat is in good demand, 3s. 10d. *a* 4s. being the price for fair samples, while fine parcels are taken up at 4s. 1½d. per bushel of 60lbs. In Oats there is a deficiency of supply and 1s. 3d. *a* 1s. 5d. is freely paid for all that offer. Good Pork is worth 25s. and inferior qualities are fetching 17s. 6d. *a* 20s. A large quantity has been taken during the past week at 22s. 6d. Hay is in good supply and the prices have risen to 55s. *a* 65s. per ton. Potatoes are in good demand and for good sorts 2s. 6d. per bushel is paid; inferior qualities are offering from 1s. 10d. *a* 2s. Buyers of wheat state that prices will go upwards, or at least hold up to the present figure for some time yet. Flour has not made much advance, Miller's Superfine being sold at 20s. *a* 21s. 3d. per bbl. of 196 lbs.

CANADIAN AGRICULTURIST.

" The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

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All communications are expected to be pre-paid.

BOARD OF AGRICULTURE:—EXPERIMENTAL FARM.

We have received from several valued correspondents, hints and opinions relative to the above important projects. Although these were given, it is presumed, with no expectation that we should make any public use of them, we trust that our correspondents will forgive us, if we cull a few sentences from their communications, for the consideration of our readers; the matters referred to possess a wide-spread public interest. It is a hopeful sign of the times, when the most intelligent and influential individuals connected with farming, in different sections of the country, proffer their advice and assistance in promoting the cause of agricultural improvement.

An experienced farmer in the Niagara District, after expressing his satisfaction that a Professorship of Agriculture was at last about being formed in the Toronto University, asks, "whether so much as 60 acres would be required for *mere experimental purposes?*" He suggests the propriety of each County Society carrying out "a full set of experiments for itself. If each one directed a set of experiments, and the results arranged and published by the Board, would not the good sought be equally well attained? Division of labour constitutes the wealth of nations;

and is equally applicable to societies as to individuals. *Experimental farms* at one half the size, where improvements could be exhibited, would be frequented by, and gratifying to, the man of business; far beyond mere lectures and scientific experiments. The mass of visitors to the University farm will, most likely, consist principally of this class; and under the direction of a practical man, it will be turned to a good account."—[We think 60 acres not too much for a *central* institution, where the *science*, as well as the *practice* of agriculture is to be taught to pupils. The suggestion that each society institute a set of experiments is an excellent one, and the central Board and Experimental farm, may be made to assist in carrying it out. This agrees with the idea of another correspondent, who observes: "I think the Board might in connection with the intended farm, furnish competent individuals, or societies through the Province, with new and improved seeds, and also recommend and procure for testing, different implements and machines." Another remarks. "If nothing more results from the present movement, than to place agriculture in the rank of the useful sciences and honorable professions, in a country where four-fifths of the people are farmers, it will be a good point gained. But I consider, in common with many others in this part, that the formation of a central Board, chosen by the different Agricultural Societies, and the publication of a respectable annual report, to be essentially necessary to the well working of the whole."—Some recommend that the Board should import, and keep on the farm, the best varieties of live-stock; while others think that such matters could be best managed by enterprising individuals and the different Agricultural Societies.

We must make room for the following extracts from the communication of an extensive and highly intelligent farmer, in the County of Norfolk, upon whose opinion and judgment, we set a high value.

"An universal feeling of satisfaction prevails at the prospect of a Professor of Agriculture in the University. * * * * * Sanguine expectations of beneficial results are extensively entertained, as the consequence of establishing a Board of Agriculture, in connection with an experimental farm. I trust that I, as a farmer of some years standing in this country, shall not be considered as either obtrusive or presumptuous in writing a few words by way of suggestion.

"It is premised that the Farm will not be conducted precisely after the plan of any of the most approved establishments of the kind in Britain, but to a certain extent, after the system that experience shows must be adhered to, in order to success in this peculiar climate; and that to effect this some person of the country should be allied in the management, with a scientific and practical agriculturist from Britain. We are all now ready to admit that our vocation may secure large assistance from the hands of science; but we are not yet completely divested of what may be termed prejudices against theorists; and we therefore hope to be triumphantly shown, that in the modern systems of farming, theory and practice may be correctly and profitably blended.

"I need not tell you that the farmers of this Province,—and of this remote quarter in particular,—are poorly remunerated; that their business only requites the most laborious and most economical. We have not only to contend with the disadvantage of low prices, but that of high wages also. This latter circumstance forbids recourse to what is known at home as high-farming, embracing expensive plans of fertilizing, thorough draining, &c. But there may be with us inexpensive means at hand, which only require investigation and testing to be made practically available. Indeed the observation of many in this township, where large quantities of charcoal were formerly made for the Normandale Furnace, convinces them that that substance is a very valuable manure; but the proper quantity per acre, frequency of repetition, mode of application,—whether in a state of powder or coursely crushed, are as yet unsolved problems. May I mention the hope that this and such like matters, may be deemed fit subjects for investigation on the Experimental farm.

"I would beg in conclusion to state that it will afford me great satisfaction, to be enabled to render any assistance to the Board of Agriculture, in obtaining correct information of a local character."

The same writer observes in reference to the *Agricultural Association of Upper Canada*:—"The importance of your Society is now so generally admitted, that I believe I am justified in saying the only feeling here, is one of regret that

our means should be so limited, as to prevent the offer of an amount, more in proportion to the rank and usefulness of the Association." Similar sentiments have been expressed by the Secretary of the Prince Edward Society; which, with that of Norfolk and several others, have steadily supported the Provincial Association from its commencement. We hope and believe that there will now be no falling off; but rather an increased, united, and systematic effort to sustain and improve the important interests of agriculture, worthy of the enlightened and advancing age in which we live, and the free and noble country that we inhabit. Canada, like a true scion of the Parent state; "*Expects every man to do his duty.*"

IMPORTANT SALE OF SHORT HORN CATTLE.

We request the attention of our readers to the extensive sale of pure bred short horns, announced on our last page. Mr. Vail has been distinguished for a number of years as among the foremost on this continent in importing and improving Durham cattle; and we are assured by a friend, on whose judgment in these matters, we set a very high value, that on no single farm this side of the Atlantic, had he ever seen so large a number of valuable and pure-bred animals as those possessed by Mr. Vail. We may just mention that Mr. Howitt's celebrated bull, (with which, and its progeny, its owner has such good reason to be satisfied) that won the first prize at the last Provincial Exhibition at Niagara, was bred by Mr. Vail; and that two of our most successful Canadian breeders,—the Hon. Adam Fergusson and the late lamented Mr. John Wetenhall, have bred from Mr. Vail's stock with the most satisfactory results. It is scarcely necessary to say that Mr. Vail's character as a man of business is such, that the fullest confidence may be safely placed in the statements which he puts forth. We shall rejoice to hear that a portion of his herd has been secured to Canada. Very few things we more urgently require.

NEW YORK STATE AGRICULTURAL SHOW.

The Exhibition for the present year will take place at Rochester, on the 16th, 17th, 18th and 19th of September. John Delafield, Esq., of Geneva, an enterprising and intelligent agriculturist, has been elected President.

THE EFFECTS OF TOBACCO.

The cultivation of this weed has already exhausted some of the richest soils on this continent. By merely drawing tobacco smoke into the mouth, without being inhaled into the lungs, it acts principally on the nervous system, and produces the effects of a stupifying narcotic. The chewing of tobacco has a similar effect. Both are practices which admit of no rational defence. The money expended in tobacco and snuff by many individnals, would be sufficient to enable them to collect a useful library; thus enlightening and strengthening their heads, instead of injuriously exciting their nerves and thereby weakening their bodies. If men would consent to the disuse of tobacco, the cause of innumerable accidents by fire, and no small amount of intemperance, which now afflict society, would be removed.

REASONS WHY COFFEE IS SO SELDOM WELL MADE.

1st. The berries are frequently too much and too rapidly roasted, their proper colour being that of cinnamon; 2nd. The coffee is ground too fine; 3rd. Not enough coffee is used; 4th. It is usually overboiled, by which means the bitter principle is extracted from the berries, and little or no pains are taken to clarify it. In teas, as well as coffee, the markets in Canada and the States are always overloaded with inferior, and frequently worthless kinds; from which it is impossible to prepare a wholesome and delicious beverage. Pure water is infinitely preferable.

HOW TO DISTINGUISH MUSHROOMS FROM POISONOUS FUNGI.

The Fungi form an interesting and rather extensive department of the vegetable kingdom; several of the species being highly poisonous, and many fatal mistakes are made from not knowing how to distinguish them.

The fact that a fungus is pleasant in flavour, affords a presumption that it is wholesome; but, if on the contrary, it has an offensive smell, a bitter, astringent, or styptic taste, or is even of *unpleasant* flavor, it is unfit for food. Color, figure, and texture cannot be relied on; yet the pure yellow, gold color, bluish pale, dark or lustre brown, wine red, or the violet, belong to many that are eatable; while the pale or sulphur yellow, bright or blood red, and the greenish, are generally poisonous. The safe kinds have mostly a compact, brittle texture; the flesh is white; they grow more readily in open places than in damp or wood-shaded spots. In general, those may be euspected which grow in caverns, on animal matter patrifying, as well as those whose flesh is watery.

LIVE FENCES.

This is a subject that must soon, in some parts of Canada, be practically entertained. Already has fencing timber, in several places, become exhausted, and its price consequently much enhanced. Hedges will prove more economical, afford better shelter, and will quite change the appearance of the country. Nothing seems so strange and objectionable to an old countryman, as our zig-zag wooden fences; which however, are in the first instance quite indispensable.

A Pennsylvania correspondent of the *Horticulturist* strongly recommends the native buckthorn, as forming the hardiest and best hedges for farmers in that State. Young plants may be procured at the nurseries for $5 to $6 per thousand; or they can be raised from seed, sown like peas, and after they have grown one year in rows they may be transplanted into a hedge. The ground should be well cleaned, manured, and deeply cultivated. Set the plants in double rows, six inches apart; not opposite but alternating with each other.

We shall be happy to hear from any of our readers, that have had experience in raising hedges in this country.

EMBELLISHMENT OF ROCHESTER, N. Y.

The *Horticulturist* observes that an extensive and beautiful improvement is about to be effected in the environs of Rochester, by building up a part of the suburbs of that city, so as to combine the greatest amount of comfort, health and beauty possible. A suitable piece of land has been selected; in the centre of this, a park of 60 acres is to be laid out and planted in the best manner, and around this are to be located the various cottages and villas of the shareholders, with ample space for gardens, shrubbery, &c.

We are glad to hear of this laudable undertaking, and hope the example will not be lost upon other cities in this hemisphere. The almost entire absence of even unadorned open spaces in American towns having large populations, is a serious drawback to health and comfort, and indicates a sad want of taste. We hope the proper authorities will look to these matters, as regards the public buildings and institutions in Toronto; so that our fair city may be rendered still fairer, by the refining and elevating influences of nature, aided by art. Providence has wisely connected the conditions of public health with external adornments. Our beautiful University grounds have yet to be completed; the extensive common, when enclosed and planted, will form a public park unparalled, perhaps, on this continent; and the ornamental grounds of the cathedral church of St. James, now in course of erection, and the normal school, about being erected, will greatly add to the appe rance, and we may observe also, to the salubrity of our rapidly increasing city.

STARCH FROM THE HORSE CHESNUT.

Mr. Belloe stated to the Academy of Science, of Paris, that he had obtained from 19 to 21 per cent of perfectly white and tasteless starch from the Horsechesnut, by simple washing in cold water and decantation.

RYE IN A WILD STATE.

According to M. De Candolle, both history and botany agree in rendering it probable that wheat, barley, rye, and oats came originally from Asia, especially from the western and central regions of that continent. M. C. Koch, an eminent scientific traveller, affirms that he found Rye under circumstances, in Armenia, the Caucasus and Crimea, where it appears to be really spontaneous and native. On the mountains of Pont, at an elevation of 5,000 or 6,000 feet, he found Rye growing on a granite soil; it was thin and the ear about 1 to 2½ inches long, and no one remembered that it had ever been cultivated in the neighbourhood.

DEODORIZING POWERS OF CHARCOAL.

Charcoal, which consists principally of the chemical element, *carbon*, is known to possess a high power of absorbing gaseous bodies, and to act beneficially, in many cases, when applied to growing plants. Charcoal prepared from Irish peat, exhibits great disinfecting powers. One part of night soil mixed with two parts of charcoal, and ground together, as recently tried in London, yielded no disagreeable odour whatever. It affords an admirable means of disinfecting cess pools. It has been found successful after careful experiments with many different manures. This is a property which will doubtless be turned to good account, both as regards the public health of crowded cities and the interests of the gardener and farmer. Charcoal obtained from wood, in the usual way, must possess similar qualities, and in most parts of Canada possess the means of procuring it in abundance.

WHY ARE MEALY POTATOES MORE NUTRITIOUS THOSE WHICH ARE WAXY?

Because of the greater quantity of *starch* which they contain. Thus, a microscope shows a potatoe to be almost entirely composed of cells, which are sometimes filled, and sometimes contain clusters of beautiful oval grains. Now, these little grains remain unchanged in cold water, but when it is heated to about the degree that melts wax, they dissolve in it, and the whole becomes a jelly, and occupies a larger space than it did in the form of grains. When a potatoe is boiled, then each of the cells becomes full of jelly, and if there be not a quantity of starch in the cells, it will not burst. But if the number of grains or their size be very great, the potatoe is broken on all sides by the expansion of the little masses of jelly; and mealiness is produced.

Frost-bitten potatoes are sweet, from the spontaneous conversion of their starch into sugar: the same effect takes place when potatoes sprout in the spring, and they are consequently of less value as food. Potatoes should be stored in the fall with a portion of earth adhering to them, or at least mixed with them; this keeps them a little damp, and prevents the action of the atmosphere from causing too powerful evaporation.

COUNTY OF YORK AGRICULTURAL SOCIETY.

We make room for the following Address of the retiring President, E. W. Thomson, Esq., read at the Annual Meeting, as it possesses more than a local interest. Mr. Thomson was unanimously re-elected for the current year.

To the Members of the County of York Agricultural Society.

Gentlemen,—In laying down the office I have had the honor to fill during the past year, and for many previous years, I think it incumbent on me to make a few remarks relative to our advancement as a Society; and while I have to regret that there still exists a very considerable degree of apathy on the part of the farmers of the County generally with regard to the interests of the Society, I think I may freely congratulate its few zealous friends, who, with myself, have from its formation, taken a deep interest in the welfare of this Society, upon some degree of advancement, as well as upon the increased interest manifested throughout the country at large in the advancement of Agriculture. And although all that we wished has not been done in our legislative halls, some degree of attention has been awakened, and some progress made towards giving that prominency to the agricultural interest of our country, which ought to be awarded to it as the most important of all its interests. I allude to the act esrablishing a Board of Agriculture, to which act you will, I presume, give effect by electing (as far as the voice of this Society willgo)

the members necessary to form that Board, after the election of the officers, who are to be selected to manage the business of the Society for the ensuing year.

I have also to congratulate the Society and country upon the probability of a Professor of Agriculture being appointed in the University, and the establishment of an experimental farm in conjunction therewith. All these being within the limits of our Society will afford to us increased facilities for advancement, which it will not be creditable to us to neglect. While these institutions are intended to be, and no doubt will be, highly beneficial to the country at large, our local position gives superior facilities for improving them to an extent not possessed by others; and it therefore becomes us to be energetic in endeavouring to extend our influence, and the best mode of doing this is by inducing a greater number of practical men to join our Society.

At our Spring Fair in May last, there were 156 entries made, and premiums awarded, amounting to £95 10s. The show of horses, I believe, was very generally admitted to be the best ever had. The improvement made in this important department of breeding is highly creditable, and cannot fail to prove remunerative to the judicious breeder. We owe much to those spirited individuals who have imported valuable stallions, and it might be well to take into consideration the propriety of improving the opportunity which the coming season will offer, of importing from England some valuable animals. At our October Fair, the show of sheep and swine was as usual good, and the display of carcasses in the market abundantly proves that there is no falling off in that department. We have a few fine horned cattle throughout our county, but that there is a scarcity of the improved breeds must be admitted. Still I think they exist to a sufficient extent to warrant a more distinct classification at our shows than we have hitherto had. The whole number of entries in October was 269, and the amount of prizes awarded was £104 5s. The Treasurer's account will show the state of our funds, and I trust the balance will be largely increased by the addition of members before our next May Fair, in order that this may be the case, each member should exert himself to induce others to join. It is no small matter of surprise that it should be necessary to make an effort to induce any farmer, or any one who duly appreciates the advantages that result from efforts, to contribute the trifling sum of five shillings, to entitle him to all the advantages of membership: but such is the fact. I would therefore recommend that we commence this year's operations by taking a certain number of copies of the *Agriculturist*, and giving one at a reduced price to each member, with the double view of upholding that journal, and increasing our subscription list. No better proof can, in my opinion, be given of increased attention on the part of the farmer to his best interests, than a desire to obtain a knowledge of everything appertaining to his calling; and this he certainly can obtain by reading the *Agriculturist* and similar publications. It should be borne in mind that liberal support is necessary to enable the publisher of any journal to do justice to it; and we might avail ourselves to a greater extent than we do, of the opportunity afforded by the publication of such a journal, of conveying useful information to each other, though living remote from one another.

Having made these few remarks, I will conclude with the expression of a hope that while our own best exertions are put forth in our calling we shall look for a blessing upon those exertions to that power who causes the sun to shine, the rain to fall, and the earth to bring forth its fruits, and without whose blessing we labour in vain.

The above is respectfully submitted.

E. W. THOMSON,
Retiring President.

Feb. 12, 1851.

SUMMER FALLOWING.

To the Editor of the Agriculturist.

Dumfries, 18th Feb., 1851.

Sir,—

In your number for January, in remarking upon a communication from Waterloo, in which reference was made to a system of cultivation spoken of as prevalent in Dumfries, viz., that of ploughing land intended for summer fallow and then working it with the cultivator and harrow until ready for seed;—you ask s me farmer in Dumfries to furnish you "with particulars and authoritative results." I had hoped to see in your February number a reply from some party, who had made a more thorough trial of the system to which your correspondent alludes, and one in more exact accordance with it than the experiment which I am about to detail to you. I had heard of parties having worked their fallows somewhat in the manner your correspondent details, and two years ago, resolved to give it at least a partial trial on a field of thirty-two acres.

The previous cultivation of the field had been irregular, and various in different portions of it. Twelve acres had been several times in grass and repeatedly manured. Twenty acres were hilly and broken, had been only once in grass, and a portion had got very foul in consequence of having been broken up and from accidental circumstances obliged to be left. The year poeceding the fallow, the state of the field was as follows. That portion of it to which I have last referred, (about 10 acres) was sown with peas, but the return was a very poor one, and the land was left more foul than before. About 6 acres were in oats after grass,—4 acres, principally a steep side hill, were in grass,—4 acres in wheat after fallow, and 6 acres in barley, after Indian corn. In the fall of 1848, the whole field, with the exception of about 2 acres, which the frost interrupted me from completing was ploughed with the Scotch plough to the depth of from 6 to 7 inches.

The remainder was ploughed as early in the following spring as the plough could enter the ground. As soon as the grass began to shew itself in the furrows, and the ground was dry enough, the cultivators were put on across the ridges, followed by the harrows, succeeded by the cultivators again. This course was followed during the whole season, as occasion required. Whenever the grass began to shew itself, and I was too busy with any thing else to pay immediate attention to it, a large flock of sheep was turned on, and the grass kept down by them. A day, sometimes two, proved sufficient to make it necessary to remove the sheep. There is this difference between the system alluded to by your correspondent and the plan I followed.—I ploughed again for the seed, and I was much pleased with the appearance of the soil when turned up. It was firm and cloddy. The grass-roots were thoroughly rotted, and the fallow altogether was one of the cleanest I have seen.

It was sown with bearded wheat (the wild goose) on the 4th and 5th of Sept. The seed was covered by the cultivators, followed by a single turn of the harrows.

The result was as follows:—The straw, even on that portion which was likely to produce it weakest, was stronger than other straw of the same kind on land of similar quality, differently treated. It was much better headed. It rose better after the storm, by which wheat was so severely laid just before harvest, and it yielded rather more than 25 bushels per acre; although, owing to a scarcity of hands and the way in which the grain was "straw-buckled" by the storm, there was much more than ordinary loss in harvesting This was not a large return, but it was larger than was obtained from neighboring fields, well worked in the usual way, and under the same description of wheat.

I ought to have told you that the soil is a lightish loam, resting upon gravel, with, in some places, more or less of a red marly subsoil intervening and is what is called, "*oak plains.*" The field suffered very materially from the severe and long continued drought of last summer.

I am very confident that the crop was at least as large as I should have had under the ordinary mode of fallowing in this country, with the plough and harrows merely; and I am quite sure that I could not have cleaned the foul portion of the field, as effectually as has been done, by any other method, without being at a much heavier expense of time and labour. The land is now clean.

The cultivator used was the common triangular implement, (with the steel teeth imported from the United States,) and which has been pretty extensively introduced in this section of country, within the last three or four years. Even in that shape it has proved a very useful and labour-saving implement. Others with similar teeth, but of a superior construction otherwise, have, as you must be aware, been since introduced.

I am, Sir,

Your most ob't ser'vt,

DAVID BUCHAN.

[It would aid materially the cause of agricultural improvement, if a number of our readers, in different parts of the country, would send us for publication, the details and results of their respective modes of cultivation, similar to the above. All arts are advanced by the mutual interchange of information derived from experience. This applies particularly to agriculture, which is a complex art, pursued by isolated individuals under a long series of varying conditions as regards both soil and climate. We hope soon to hear again from our intelligent and respected correspondent, on such practical matters as have come within the range of his observation and experience. In this manner, there is scarcely one of our readers, but might render some aid to the agriculture of the country.]—ED.

ON BUTTER MAKING.

The following simple and practical directions with regard to an important department of the economy of a farm, we have received from a correspondent; and we doubt not several of our readers will find them useful. Butter, generally in this country, is by no means so good as it ought, and might be. Attention to the subjoined rules will facilitate the improvement of the quality of this important article, and increase its marketable value.

To the Editor of the Agriculturist.

Our cows are kept in the ordinary way, pastured in summer, and fed on clover hay and bran mash in winter, with the addition of a few cabbages now and then.

By the way I find white clover, or common meadow grass, makes better butter than red clover, although the latter makes the largest quantity.

The cows are milked at 6 A. M. and 6 P. M. in summer, and 7 A. M. and 5. P. M. in winter.

We use large shallow earthenware pans, 18 inches diameter at top and 5 in depth, in preference to tin ones; the latter seldom being made shallow enough in proportion to the depth, besides being objectionable in several other ways.

The pans should be kept carefully clean, and should be scalded before putting the milk in.

The milk should stand till sour in summer before skimming, in order to give all the cream time to rise, and the butter will be none the worse for it. In winter it stands 48 hours before skimming.

The cream is kept in a tall earthenware jar, in a cool airy place, and covered with wire-gauze to keep out the flies.

The cream is churned twice a-week in summer, and every ten days in winter. [We use Fraer's churn.] The cream is always brought to a heat of 62 degrees, before putting it into the churn, by putting cold water in, in summer, and setting it by the fire in winter.

When the butter is gathered, it is taken out of the churn with a wooden ladle, and the milk worked out in the bowl, with the ladle; when the milk is worked off, cold water is poured on and allowed to run off without working the butter in it; when tolerably worked it is weighed, and 1 oz. fine saltpetre is added to, and well mixed with, 1 lb. of the finest dairy salt; and 1½ oz. of the mixture put to each pound of butter. The rest of the milk well worked out and the butter made into rolls or put into small stone jars.

The hands are never allowed to touch the butter during the whole process, it is a dirty practice, and makes the butter disgustingly soft and greasy.

The butter made as above is considered by all who have tasted it to be first-rate, and commands the highest price.

J. M.

Ancaster, Feb. 10th, 1851.

VILLAGE LECTURES.—No. 4.

The Soil and the Air Continued.—Take a jar full of oxygen gas; it is not common air, tho' air contains it, and it is to the oxygen that the air contains, that it owes its ability to burn things, and its ability to maintain respiration—the breath of life in living animals. In the air, this gas is mixed with another, called nitrogen, which dilutes the former, so as to make it fit for the ordinary conditions of human life; were it not thus diluted, it would be much too violent in its action. I have here a jar full of it, and you will see that it makes use of the least spark to produce a flame; so that if the air were pure oxygen, every spark would end in a conflagration.

I shall burn this piece of wood in this oxygen gas. Now, on removing the wood, I find a portion of it has disappeared—it has burned up—it has united with the oxygen gas, and is now in this jar, in the form of a clear gas. The gas is of very different properties now; the oxygen gas being satisfied by union with the charcoal in this way, has no longer any appetite, so to speak, for union with other things of the same kind; it will not now unite with the substances of tallow, and consequently so far from encouraging that chemical action which is productive of flame, it would extinguish flame immediately on its being brought in contact with it; and therefore, also, so far from encouraging that chemical action which goes on during respiration of animals, and to which the healthfulness of a fine bracing air is owing, it extinguishes that chemical action at once, and would choke any animal that fell into it; but to this point we shall refer again.

Now, if I prove that the air contains this gas, the carbonic acid gas, as it is called, which contains the charcoally part of wood, then I shall have proved that the air contains the very substances which we find in trees and plants, and which they take from it in the act of growth, and this is the way in which I prove that. The carbonic acid gas is recognised not only by its extinguishing flame and destroying life, but by this curious property, that when united with lime it forms a chalky insoluble substance; so that if I pour some clear lime water into this jar of it, and shake it up to induce the lime of the water to unite with the gas, it will become white and milky in appearance, owing to the formation of this chalky, insoluble substance, as you see. Now, if I can pass a quantity of common air through some lime water, and the lime water, originally clear, becomes milky in this way, it will be because it, too, contains carbonic acid, and I shall thus have proved that there is in the air, a gas which contains the very particles of charcoal which our plants and trees require for their growth. Of course the air contains a very small portion of it, not so much as a 1000th of its bulk; because, if it contained much, it would destroy life instead of preserving it; and I must, therefore, employ an apparatus which enables me to draw a large quantity of air through a small quantity of lime water; such an apparatus, in fact, as I have here, where the water below falls out and pulls the air in after it, through the lime water in this crooked tube; and you see that though clear before, it is muddy enough now, owing to the formation of chalk in it, or carbonate of lime; and I have thus proved that the air contains the carbonic acid gas which was necessary to form this chalk, contains charcoal—contains the substance of our plants and trees.

The air, then, contains charcoal, and gives it to plants. The fact is, that carbonic acid gas is a compound of charcoal and oxygen; you saw it formed when I burned the charcoal in the oxygen; and the fact is, that, in the sunshine, plants ab-

sorb the carbonic acid, take its carbon, or charcoal, and give back its oxygen pure to the air. But before you can see the beauty of this process, for it does appear a really beautiful thing when rightly understood, it is necessary for you to know the properties of these two gases. Carbonic acid gas is "choke damp;" it sometimes collects in old wells and pits, and would then kill any one who enters them. It is heavier than common air, and so sometimes collects in deep places. There are places where this gas accumulates on the surface of the earth. There is a valley in the island of Java, in the bottom of which there is a spring of this gas, and accordingly the valley is a lake of carbonic acid gas, and it is, in reality, what is called, the Valley of Death. Travellers who have visited it describe it as an utterly barren basin, with a rim of remarkably luxuriant vegetation, and the skeletons of animals cover the ground beneath; they had wandered in, been choked by the gas and died. There was a skeleton of a man lying a little way down the slope; he had unwittingly entered the fatal lake of air, been intoxicated by breathing it, for it is a narcotic poison, and lying down, had died. No one dared venture to enter the fatal air to help or recover a friend without the certainty of sharing his fate.

Now, wherever oxygen is united with charcoal, it is forming this deadly destructive gas; and every fire that burns, and every dungheap as it rots, and every breath that is drawn, is simply a uniting of the charcoally substance of wood or coal, or straw or food, with the oxygen of the air, and is constantly giving out carbonic acid gas. And the air, though it contains but little proportionally, contains a great deal of this gas actually. There is but one-thousand part of the air that is carbonic acid gas, but then there are 42,000 tons of air resting on every acre of the earth's surface, so that there are actually 400 lbs. of carbonic acid gas—a quantity containing 100 lbs. of charcoal—in the air over every square perch of ground; and this, of course, increases with every breath that is drawn, and every fire that is burned, so that we might suppose, in the course of years, the atmosphere would become loaded with this gas, and animals would be unable to live in it; and no doubt this would ultimately be the case; for besides the fires which are thus making the air unfit for animal life, animals are rapidly making it unfit for themselves. Each of us gives out carbonic acid gas with the air we breathe—our lungs are in fact, a little fireplace within each of us, where our food is in a great measure burnt up, and our windpipe is the chimney by which the products of that combustion are sent into the air. It is in this way that the heat of the living body is kept up, whatever be the coldness of the air. Whenever carbon unites with oxygen gas, heat accompanies the chemical action, and whether it be the coal in our fire place, or the straw on our dungheaps, or the tallow in our candles, or the food in our bodies —the union of the oxygen of the air with the charcoal they respectively contain, affords heat —heat in proportion to the rapidity of the process of union and the quantity of carbon in the fuel; and so, in order to increase this heat and induce the oxygen to combine rapidly with the charcoal, we build chimneys to draw the air through the furnace, or we turn over our dungheaps to cause the air to mix with them more thoroughly, or we run about and take exercise in order to breathe the faster; and so the furnace gets hotter, and the dungheap heats more rapidly, and we get warmer; or perhaps the heat is increased by using substances which contain more charcoal to unite with the oxygen gas; and in this way, coke makes a hotter fire than wood, and oil or camphine, a brighter light than tallow; and for this reason, too, the Esquimaux of the arctic regions eats enormous quantities of blubber, while the inhabitants of the hot countries of India and China live sparingly upon rice. The heat in every case is proportioned to the quantity of charcoal which can be got in a given time to unite with the oxygen of the air; and so the cold-country man makes a perfect oil lamp of his lungs within him, and takes boisterous exercise to keep the bellows blowing, in order to preserve his warmth; while the hot-country man of placid temper and sluggish movement eats sparingly, employing less fuel, because he loses less heat.

Sensible Horses.—Lang, in his Travels in Norway, says, that the horses in that country have a very sensible way of taking their food. Instead of swilling themselves with a pailful of water at a draught, no doubt from fear of not getting any again, and then overgorging themselves with dry food for the same reason; they have a bucket of water put down beside their allowance of hay. It is amusing to see with what relish they take a sip of the one and a mouthful of the other alternately, sometimes only moistening their mouths as a rational being would do while eating a dinner of such dry food. A broken-winded horse is scarcely ever seen in Norway.

Individual Enterprise.—A trader named Mr. Zacharia, five months ago, took a small store, 6 ft. by 10 ft., situated on the levee, and invested $50 in clothing. Since that time he has turned over $215,000, has enlarged his house of business, and is now on his way to the States to bring his family to Stockton.—*Stockton Times.*

SMITHFIELD CATTLE SHOW.

Doctor Rogers, of Rochester, the author of a Scientific Treatise on Agriculture, is now, it appears, in England, and is contributing a series of letters to our excellent contemporary, "*Moore's Rural New Yorker.*"

Referring to the last Smithfield Cattle Show the Doctor observes.

"There were exhibited a large number of agricultural implements, some of which were of very good patterns and fine workmanship, while others were heavy, unwieldly and clumsy. One thing worthy of remark was the fact that many which have been in use for many years in England, are now just being patented in the United States, and supposed to be new inventions. The patent two wheeled plough, I have seen both in England and France, and have been informed it has been in use many years. I noticed among hundreds of articles, only two worthy of special remark, viz., glass milk pans and other dairy furniture, and a new machine for making hollow bricks and tiles and pipes for draining. The bricks made by this machine are perforated longitudinally by a square opening in the centre from one to two inches in diameter, so that they are laid in the wall in such manner as to allow of a free circulation of air; they have also the advantage of being lighter, quicker burnt, and requiring less material than solid bricks."

[The writer must have been particularly unfortunate in his opportunities of tasting butter;—an article which it is notorious the British Islands produce unsurpassed both in quantity and quality, by any other portion of the world.]—Ed.

"The dairy was also largely represented,—the department devoted to cheese, fully sustained the reputation which it has long enjoyed abroad. The Cheshire cheese is, in reality, rich and deliciously flavored, beyond the conception of one who has never tasted it; this is owing partly to the skill employed in its manufacture, and partly to the food of the cows, being composed of sweet nutritious roots, and the rich tender pasture which a mild moist climate produces. The butter, however, is far inferior to that made by our best dairymen in New York; it is adhesive, tasteless, too fresh, and nearly all more or less tainted; this latter quality is attributed to the season of the year,—but a dairy conducted on scientific principles, ought to produce butter which will keep through a winter, and if necessary, through one or more whole years. But whatever the explanation may be, I have not seen or tasted a particle of good butter as yet, in England or France."

BEAT THIS WHO CAN—A GIGANTIC HOG.

Mr. John Tindale of the Village of Bolton, in Albion, bred during the past year one of the largest pigs we remember to have seen an account of.—The pig is 2½ years old—was fed on peas and oatmeal—of the common Canadian breed of hogs.—Its weight when in Toronto was 980 lbs., color white, height 3 feet seven inches, length from nose to tail six feet 3 inches, girth six feet 7 inches round the breast, girth round his loins seven feet. Mr. Tindale sold this hog to Mr. Ewart of Montreal pork dealer, for $45, having exhibited it for several days in Toronto. Mr. Ewart has since been offered he says three times the amount given for it. He has taken it alive to Montreal, whence he is going to ship it alive to London to exhibit at the Great Exhibition of this year.

HOW TO MAKE HORSES SURE-FOOTED.

A singular account of the manners of the ancients in the matter of breaking in their horses and rendering them sure footed when galloping over the most irregular and dangerous grounds, is related by Vegetius. The Parthian horses were lighter and hardier than those of the Cappadocians or Medes, and were the best war horses.—A spot of dry level ground was selected, on which various troughs or boxes, filled with chalk or clay, were placed at irregular distances, and with much irregularity of surface and height.—Here the horses were taken for exercise, and they had many a stumble and many a fall as they galloped over this strangely uneven course; *but they gradually learned to lift their feet higher and to bend their knees better, and to step sometimes shorter, and sometimes longer,* as the ground required, until they could carry their riders with ease and safety over the most irregular and dangerous places. Then it was that the Parthians could fully practice their favorite manœuvre, and turn upon and destroy their unsuspecting foes. They were as formidable in flight as in attack and would often turn on the back of the animal and pour on their pursuers a cloud of arrows that at once changed the fortune of the day.

(Concluded from our last.)

Observations and Remarks on the Meteorology and Climate of Upper and of Lower Canada; by William Winder, Esquire, M.D., Librarian to the Honorable the Legislative Assembly of Canada.

The vegetable kingdom in America has reigned under two great aspects, those of forests and prairies. The forests extend from the River St. Lawrence to the Gulf of Mexico, over plains, declivities, and mountains. A European can form no idea of the magnitude and beauty of the American primeval forests and trees; and while in France there are said to be only thirty-seven kinds of trees that grow to the height of thirty

feet, there are, in America, one hundred and thirty kinds which excelled this measurement; which, with the variety of their growth and foliage, are the admiration of every beholder.

On a review of the vegetable products of the Canadas, we find that in both Provinces they are much the same, a consequence that might be expected to follow from the similarity of climate.

Of those of Upper Canada it may be remarked, that all the fruits generally found in England thrive remarkably well; but the plum, apple, strawberry, raspberry, and melon; attain a luxuriance of growth and perfection, as stated by a modern writer, unknown in England. The melon, planted in the open ground, in most years produces excellent crops. In many places vines prosper well. Peaches are indigenous south of the parallel of 43°, or at least grow rapidly from the stone, and bear fruit within a few years; although good and rich flavoured grapes and peaches are seldom met with, owing to their culture being neglected. The same observations apply to all garden produce, which will attain a degree of luxuriance unknown in England, with much less care and culture. In Lower Canada, the new land is covered with timber; the greater part of the trees being from two to three feet in diameter—the larger the timber, the better the soil—and therefore the choice of land is generally directed by the growth of timber on it. Where beech, maple, hickory, butternut, and chesnut grow, we find a good soil of yellow or hazel loam; where elm, white-ash, white-oak, butternut, and red-oak grow, the soil is strong; where white-pine, hemlock-pine, birch and spruce grow, the soil is sandy; cedar swamps, though often composed of good soil, are not desirable, unless easy to drain; black-ash, soft-maple, or plane swamps, are mostly on a clay or marl, and if well-drained make lasting meadows; where there are small poplar and small white-birch, the soil is poor, being light loam on white clay.

The foregoing may be taken as a descriptive list of forest trees in the Lower Province, and the soils on which they grow. The soils most congenial for orchards are light loams or gravel. Apple-trees thrive much, also, on rocky or limestone land. A great variety of apple, pear, peach, plum, cherry, grape-vines, and other fruit trees may be found in the neighbourhood of Montreal; the apples from thence are considered superior to any other. Cherries, chesnuts, walnuts, hickory, hazel, and filbert nuts, grow wild, as in Upper Canada,—as do gooseberries, strawberries, raspberries, blueberries, cranberries, and black currants.

These details will, it is hoped, be of some service to those whose attention may be directed to the study of the climate of the Canadas, and their agricultural capabilities.

The present rage for emigration to North America and Canada, has certainly been the means of eliciting much valuable information relative to those countries; but it has also produced much merely literary speculation, numerous ridiculous blunders, and not a few wilful misrepresentations. The dictum of Voltaire, that Canada was merely a barren rock, covered with perpetual frost and snow, has, with strangers, passed into a proverb; but the emigrant farmer may be told with truth, that although the season appears short, and the cold intense at certain periods, the winters are more pleasant and salubrious, and the summers warmer than those of England; the seasons more uniform, and the air more clear and dry.

Medium temperature of the air in Upper and Lower Canada, from the 1st of January to the 31st December, 1848, inclusive:—

MONTREAL	Mean of the Month.	TORONTO.	Mean of the Month.
January, ...	18.9°	January, ...	27.41°
February, ...	19.	February, ...	26.28
March, ...	27.6	March, ...	27.4
April, ...	42.8	April, ...	40.67
May, ...	61.	May, ...	53.74
June, ...	70.	June, ...	62.54
July, ...	73.5	July, ...	65.37
August, ...	72.8	August, ...	68.34
September, ...	57.4	September, ...	53.39
October, ...	45.	October, ...	46.38
November, ...	31.4	November, ...	33.61
December, ...	23.45	December, ...	29.12
Total Means,	538.89°	Total Means	533.89°

1849. MONTREAL	Mean of the Month.	1849. TORONTO.	Mean of the Month.
January, ...	11.7°	January, ...	18.49°
February, ...	Not known	February, ...	Not known.
March, ...	31.66°	March, ...	33.24°
April, ...	39.6	April, ...	38.74
May, ...	54.2	May, ...	48.30
June, ...	71.5	June, ...	63.
July, ...	75.7	July, ...	67.82
August, ...	74	August, ...	65.
September, ...	59.1	September, ...	57.
October, ...	46.3	October, ...	44.94
November, ...	41.	November, ...	41.87
December, ...	17.9	December, ...	26.56
Total Means,	519.6°	Total Means	514.96°

1847. MONTREAL	Mean of the Month.	1847. TORONTO.	Mean of the Month.
January, ...	Not known	January, ...	Notknown.
February, ...	13.25°	February, ...	22.48°
March, ...	23.55	March, ...	26.25
April, ...	39.36	April, ...	39.
May, ...	61.45	May, ...	53.49
June, ...	70.	June, ...	58.14
July, ...	77.76	July, ...	67.62
August, ...	72.	August, ...	63.93
September, ...	59.5	September, ...	54.91
October, ...	45.	October, ...	43.71
November, ...	35.6	November, ...	38.
December, ...	20.9	December, ...	30.
Total Means	516.57°	Total Means,	497.53°

YEAR.	Mean of Year.	YEAR.	Mean. of Year.
Montreal, 1847,	46.77°	Toronto, 1847	45.21°
do. 1848,	44.9	do. 1848	44.49
do. 1849,	47.18.	do. 1849	46.81
Total, ...3	138.4°	Total, ...3	136.50°
Mean of 3 yrs.	46.4°	Mean of 3 yrs.	45.50°

YEAR.	Mean of Year.	YEAR.	Mean of Year.
Mean of Montreal, ...	46.4°	Mean of Montreal, ...	46.4°
Mean of Toronto, ...	45.50	Mean of Toronto, ...	45.50
	91.54°		
Mean average Temperature of Upper and Lower Canada, ...	45.77°	Difference of Temperature between Upper & Lower Canada, for three years, .	1.46°

The following results, taken from the Government Meteorological Observations, made at Toronto for the past ten years, will serve to correct any erroneous impressions respecting the climate of Upper Canada:—

Mean temperature, taken from ten years observations, 44.3°.
Highest temperature, 95.0° —12th July, 1845.
Lowest do. 18.6° —16th January, 1840.
Total number of days on which rain fell, 965.
Yearly average, 97.
Total number of days on which snow fell, 475.
Yearly average, 47.
Total number of days perfectly fair, 2,213.
Yearly average, 221.
Average yearly depth of rain, 33.4 inches.
Average yearly depth of snow, 56.6 do.
Mean temperature of four summer months, 62.6°, four warmest months.
Mean temperature of four winter months, 26.6°, four coldest months.

It is to be remarked, that if a particle of snow or rain falls during the 24 hours, the day is respectively considered at the Observatory as a rainy or snowy day.

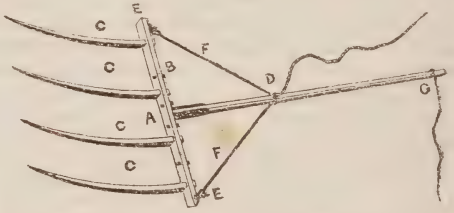
WILLIAM WINDER.

Toronto, 2nd August, 1850.

PITCHING HAY BY HORSE POWER.

We find described in an American Agricultural Journal a new mode of unloading hay which in our opinion migh be adopted on large Hay farms with great advantage.

It was first practiced in Pennsylvania, we believe, and is said to be of great advantage where large quantites of hay are stored in barns and sheds —especially as the work of hauling and storing is often done in a hurry to avoid rains, and this contrivance, by a saving of time in unloading, is sometimes the means of preserving several tons of good hay from damage. The cost of the fork and blocks and ropes is only about $7. The following description is from the Pennsylvania Cultivator:—



The *head* of the fork, A, is about 28 inches in length, and two and a half inches square, and is made of white oak. The *handle* should be about five and a half feet long, and morticed into the head, and secured firmly by a strap of iron clasped around the head, and extending some distance up the handle. The prongs CCCC, must be made of good steel, about 20 inches long, and five-eighths of an inch thick at the head, and tapering down to a point. They are to be set in the head at equal distances apart, with a burr to screw them up tight, and a rivet on each side of the middle prongs, to keep the head from splitting. Staples are to be rivited into the head at each end, EE, to which ropes, FF, are attached and brought together, about 3 feet from the head at D, and a single rope connected with them at the junction, is passed over a pulley fixed to a rafter near the peak of the roof. This pulley is placed about two

or three feet over the mow. The rope is passed down under another pulley, fixed to the lower part of the door post, in order to change the direction of the rope, and admit of a horizontal or level draft for a horse. Everything being prepared, and the gearing complete, the wagon load of hay is driven into the barn floor, and the process of unloading commences, as exhibited in the following cut:—

The fork is inserted into the load of hay, and the horse, attended by a boy, is put in motion, and the hay drawn to any required height. The fork is kept level by means of the rope G, attached to the end of the handle, until the time of discharging the fork-full. The rope in the hand of the man on the load is then slackened, and the hay deposited; or a person in the mow can, if he chooses, give direction to the fork-full, while it is still suspended, so that one man can ordinarily dispose of it in the mow. The horse is then backed up, and the fork drawn down by the small rope attached to the handle, and retained in the hand of the person on the load. In this way six tons per hour can be pitched 20 feet high; and in a great hurry, and changing hands, even double that much may be pitched in an hour.

Extraordinary Yield of Wheat.—Wm. Wallace, Esq., Township of Cavan, has informed us, that he imported from Rochester last year, 11 bushels and 40 lbs of the Soli's wheat, which he sowed on 7 acres, and which yielded the large quantity of 327 bushels of superior wheat and averaging over 46 bushels and 42 lbs to each acre. This is truly gratifying and must prove greatly encouraging to our agricultural friends to imitate the laudable example of Mr. Wallace, and strive with all their might to get similar results from their well cultivated fields. If Mr. Wallace has not already disposed of his wheat, we would recommend every practical farmer within 25 or even 50 miles of his residence, to try and get a few bushels of his celebrated Wheat for seed, and give it a fair trial, and we have no doubt they will be fully and amply rewarded by a rich and abundant harvest.—*Port Hope Watchman.*

THE HUSKERS.

BY JOHN G. WHITTIER.

It was late in mild October, and the long autumnal rain
Had left the Summer Harvest-fields all green with grass again;
The first sharp frost had fallen, leaving all the woodland gay
With the hues of Summer's rainbow, or the meadow flowers of May.

Through a thin dry mist that morning, the sun rose dry and red,
At first a rayless disc of fire, he brightened as he sped;
Yet, even his noon-tide glory fell chastened and subdued.
On the corn-fields and the orchards, and the softly pictured wood.

And all that quiet afternoon, slow sloping to the night,
He wove with golden shuttle the haze with yellow light;
Slanting through the painted beeches he glorified the hill,
And beneath it, pond and meadow lay brighter, greener still.

And shouting boys, in woodland haunts, caught glimpses of that sky,
Flocked by the many tinted leaves, and laughed they knew not why;
And school-girls gay with sister-flowers, beside the meadow brooks,
Mingled the glow of autumn with the sun-shine of sweet looks.

From spire and barn, looked westerly the patient weather cocks;
But even the birches on the hill stood motionless as rocks;
No sound was in the woodlands, save the squirrel's dropping shell,
And the yellow leaves among the boughs, low rustling as they fell.

The Summer grains were harvested; the stubble-fields lay dry,
Where June winds rolled, in light and shade, the pale green waves of rye,
But still, on gentle hill-slopes, in valleys fringed with wood,
Ungathered, bleaching in the sun, the heavy corn crop stood.

Bent low by autumn's wind and rain, through husks that dry and sere,
Unfolded from their ripened charge, shone out the yellow ear;
Beneath the turnip lay concealed, in many a verdant fold,
And glistened in the slanting light the pumpkin's sphere of gold.

There wrought the busy harvester; and many a creaking wain

Bore slowly to the long barn door its load of husks and grain;
Till, broad and red, as when he rose, the sun sunk down at last,
And like a merry guest's farewell, the day in brightness past.

And lo! as through the western pines, on meadow, stream
Flamed the red radiance of a sky set all a-fire beyond,
Slowly o'er the eastern sea-bluffs a milder glory shone,
And the sunset and the moonrise were mingled into one.

As thus into the quiet night the twilight passed away,
And deeper in the brightening moon the tranquil shadows lay;
From many a brown old farm house, and hamlet without name,
Their milking and their home tasks done, the merry huskers came.

Swung o'er the heaped up harvest, from pitchfork in the mow,
Shone dimly down the lantern on the pleasant scenes below;
The glowing pile of husks behind, the golden ears before,
And laughing eyes, and busy hands, and brown cheeks glimmering o'er.

Half hidden in a quiet nook, serene of look and heart,
Talking their old times o'er, the old men sat apart;
While up and down its unhusked pile, or nestling in its shade,
At hide-and-seek, with laugh and shout the happy children played.

Urged by the good host's daughter, a maiden young and fair,
Lifting to light her soft blue eyes and pride of soft brown hair,
The master of the village school, sleek of hair, and smooth of tongue,
To the quaint tune of some old psalm, a husking ballad sung.

I'M OF THE BAND THAT TILL THE LAND.

BY JAMES STARKEY.

I'm of the band that till the land,
And draw from the earth her store;
Right happy indeed's, the life we lead,
While our days are passing o'er,
Many there are, in riches far
Surpassing the farmer's purse,
While other pursuits may yield more fruits,
Yet often bring forth much worse.

We envy not the statesman's lot,
Still clamouring for his class;
Nor his that fights for glory's rights,
At some redoubted pass.

No risks have we on boisterous sea,
Nor fears lest tempests whelm
All we possess, without redress
While laboring at the helm.

The fruitful field its beauties yield,
A rich reward for toil;
Be ours the trade to ply the spade,
And deeply plough the soil.
We walk abroad on carpet sod,
And flowerets kiss our feet,
Whose odours rise to scent the skies—
A tribute poor and meet.

To all we give the means to live,
As brother shares with brother,
And thus fulfil the holy will
That bids us "love each other."
Oh! life secure from guile, and pure!
To thee my soul clings ever
With all its might, in fond delight,
To change from thee, no never.

BEET ROOT SUGAR.

The following is from the *Cork Examiner*:—"Some portion of the attention which is now generally turned towards the promotion of manufactures would be usefully directed to the production of sugar from beet root. Already it is carried on to a great extent in France and Belgium where vast numbers of people are employed in it, and large establishments erected for the purpose. We have seen a specimen of sugar made from beet root in the latter country, which was exhibited at a late meeting of the Dublin Society, and which naturally excited much curiosity. It is of the purest appearance, of strong sweetening quality, and in colour resembling the species of sugar known as crushed lump. The most singular part of the matter is, that it was manufactured in the space of forty-five minutes, the entire time occupied from taking of the root out of the ground and putting it into the machine to the production of the perfect article. Some reluctance was evinced to tell the price at which it could be made; and, in reply to a question on that point, it was said that it could be produced at the market rate for sugar of a similar quality in this country, about 6d. per pound. We have ascertained, however, that the article could really be made for two-pence half-penny per lb. An acre of ground is calculated to yield fifty tons of Silesian beet, which, in France and Belgium, give three tons of sugar, worth about £50; the refuse being useful for feeding cattle and in those countries being actually used for that purpose. But from the superior fitness of the Irish soil, as shown by experience to be the case, it is confidently affirmed by persons competent to form an opinion, that eight per cent. of sugar could be obtained here on the raw bulk."

Horticulture.

ACTION OF CARBONIC ACID ON PLANTS.

Professor Daubeney of the University of Oxford, reported to a late meeting of the British Association, the following facts as the result of careful experiments:—Plants consisting of ferns and pelagonians, subjected to an atmosphere containing 5 per cent of carbonic acid, did not appear to be injuriously affected; second, a quantity amounting to 20 per cent, injured plants exposed to it; third, the quantity of oxygen given out by plants was not found to be increased by the quantity of carbonic acid to which they were exposed; fourth, on exposing animals to the action of carbonic acid, it was found that frogs and many fish could live in an atmosphere charged with 5 per cent of this gas. From these experiments, he concluded that no objection could be offered to the the theory of a large proportion of carbonic acid having existed in the atmosphere, in the early periods of the world's history; such for instance when the immense coal strata were in the course of formation.

THE ROSE.

Professor Agassiz, in a lecture on the trees of America, stated a remarkable fact in regard to the family of the rose, which includes among its varieties, not only many of the beautiful flowers which are known, but also the richest fruits, such as the apple, pear, peach, plum, apricot, cherry, strawberry, raspberry, blackberry, &c.: namely, *that no fossils of plants belonging to this family have ever been discovered* by geologists! This he regarded as conclusive evidence, that the introduction of this family of plants upon the earth was coeval with, or subsequent to the creation of man, to whose comfort and happiness they seem especially designed by a wise Providence to contribute.— *Scientific Annual.*

FIRE BLIGHT.

This mysterious disease, to which the finer sorts of fruits,—particularly pears, are so liable in this climate, may be owing in a great degree to sudden changes in atmospheric temperature. The *Horticulturist* recommends the shielding of the most vulnerable points from excessive heat or cold; to mulch the ground and sheath the stems with straw, whenever they are not sheltered by the leaves. This is said to work well in preserving the trees in sound health.

QUINCES ON THORNS.

A correspondent of the *Horticulturist* for February, observes that he had seen the most beautiful quinces grown upon the common white-thorn. The stocks were from 1 to 1½ inches in diameter, and grafted about 2 feet from the ground. It is said that in this way the trees are less subject to the borer and other insects; the stocks are hardy, being natives of the poorest soils and most exposed situations; and they are converted by grafting into objects of beauty and utility.

PLANTING ROSES.

The beauty and interest which a garden affords depend greatly upon the disposition of its individual parts; even the arranging and planting of a single bed require experienced taste in order to produce effective display. Take, for example, a rose bed; imagine the kinds to be indiscriminately mixed, and no attention to have been paid to their respective heights, and the effect produced by such a medley assemblage will be immediately felt by any person possessing taste and unaccustomed to observation. Let us further suppose such a bed to be circular, and the effects will be as bad as they well could be, unless the object aimed at was to represent wild nature. The taller plants should have been planted in the centre and the others arranged so as gradually to fall to the outer rim. This arrangement would advance us a step; but let us proceed further and dispose of the trees in zones or circles. In this way we give the bed the expression of design. For be it clearly understood that we are discussing gardening in an artificial sense. Now let us go a little further still, and consider whether there be not yet room for improvement; suppose we plant one colour in the centre circle, and so change each circle until we reach the outer one. By such a classification we add colour as well as design; but imagine the colours to be so arranged that another important feature is produced, viz., contrast, and the picture becomes still further improved, though not yet finished. Would not an edging render the whole more complete? The

beauty and brilliancy of the rose would be singularly improved and relieved by an evergreen margin. This would in some measure help as it were to lift the group from the earth and place it nearer the eye. This edging may be of Ivy or Cotoneaster microphylla or Pernettya mucronata, or in fact any low dwarf evergreen shrub kept shorn into a formal rim. In the above is shown how much beauty may be exhibited even in a circular bed, by the exercise of a little taste and forethought; but these simple principles are by no means confined to a rosebed;they can be carried into effect in the arrangement of a garden, so that unity and comprehensiveness of design may characterize the whole. When a contrary state of things prevails, delight vanishes, confusion takes the place of order, disgust that of pleasure, and instead of the most charming of all pursuits, contributing to relieve the man of business from the oppression and satieties of mind usually resulting from close application, he abandons the whole in utter dismay and hopelessness.—*Gardener's Chronicle.*

Gooseberry Caterpillar.—As the eggs of the gooseberry moth are laid on lines on the back of the leaves, they are easily destroyed on the bush while in that state, without injuring either the bush or the fruit: and, as there may be a succession of young larvæ for a considerable length of time, we would need to repeat the cure every other week, which would perhaps be troublesome as well as expensive. From experience I have found hand-picking the surest plan in the end, if judiciously done. My plan is this:—I go round and examine the centre or heart of the bush; by this view of the bush you can easily perceive the leaves that are attacked by caterpillars, as they will be seen perforated with small holes, as if pierced with a pin. Yet after these are all off the bush, you have not finished your labour, as there may be a great number of leaves with the caterpillar in the ovum or egg state in hundreds on the back of these leaves, ready to sally forth in a few days and devour the foliage; therefore you must go round and lift up the branches, one by one, and look upward, on the back of the largest and most detached foliage; you may there see the eggs laid in great numbers on the back of the leaves. If one single leaf in this state is pulled off, what a saving of labour and vexation is gained! Besides, if the caterpillars had been left undisturbed, perhaps for a day or two, you would have had to seek them throughout the whole or a considerable portion of the bush. As necessity is frequently the mother of invention, I lately fell on a plan which facilitates the work a great deal; the plan is as simple as it is successful, and although it may be thought rather a novel method, yet if one becomes accustomed to it, it will be found of great service in getting a proper view of many parts of the bush that could not be got at otherwise:—Take a common hand mirror or looking-glass, and with one hand hold it under the leaves of the bush, near the ground, and move it in different directions under the branches, and by looking into the glass you will see the eggs on the back of the leaves, while by your eye you can direct your other hand to the proper leaf; and by picking off the caterpillars on the leaves in this state,what a world of future labour is saved, as I have frequently counted from 80 to 150 on the back of a single leaf.

A BEAUTIFUL FLOWER.

A friend presented us a day or two since, with a curiosity in the shape of a flower, which we think, is one of the greatest wonders of the floral kingdom we have ever seen. It is about the size of a walnut, perfectly white, with fine leaves resembling very much indeed the wax plant.—Upon the blooming of the flower, in the cup formed by the leaves, is the exact image of a dove lying on its back, with its wings extended. The Peak of the bill and the eyes a e plainly to be seen, and a small leaf before the flower at maturity forms the outspread tail. This leaf can be raised or shut down with the fingers, without breaking or apparently injuring it, until the flower reaches its full bloom, when it drops off. We regret our inability to give a technical description of this curiosity at this time, but we hope t. do shortly, as one has been promised us by a person every way qualified to write.—*Panama S ar.*

THE COW TREE.

When travelling in South America, Humboldt and his companions had an opportunity of satisfying themselves, by ocular examination, respecting the truth of the accounts they had received of the *palo de vacca*, or cow tree, the milk of which the negroes were said to consider wholesome aliment. They found by experience that the virtues of this extraordinary tree had not been exaggerated, the palo de vacca is a handsome tree, resembling the broad-leaved star-apple; incisions are made in its trunk; it yields an abundance of glutinous milk, of an agreeable and balmy smell. This sweet and nourishing fluid flows most abundantly at the rising of the sun. The blacks and natives are then seen hastening from all quarters, with large bowls to receive the milk.

Fruit-raising in New Jersey.—Mr. George W. Orbet, of Pennington, Mercer county, N. J., writes us that he has a peach orchard of 3,300 trees, nine years old, which has borne six full crops in succession. It occupies twenty acres of ground. He states that in 1849, his crop cleared $6,000. The peach in general was that year destroyed by frost. The orchard is on a high northern exposure, which keeps the trees from blossoming till the spring is well advanced. Mr. O. states that he put out 500 apple trees last spring of the choicest kinds, and that he did not loose one of the trees. Several of them produced apples the same season.

Analysis of the Apple.—A paper on the analysis of the fruit of the apple, by Dr. Salisbury, furnishes some facts worthy of notice. Owing to the lateness of the season (in spring,)before the analysis was commenced, the following sorts only were examined, viz: Swaar, Kilham Hill, Rhode Island Greening, English Russetts, and Talman Sweeting. From the numerous table of results, the following facts are drawn:—

The English russet contains less water and more dry matter than any other sorts —This is doubtless the reason why this variety is so hard to freeze. Mhe Talman Sweeting contains more, the greening still more, and Kilham Hill most of all; ranging in all these from 79 to 86 per oent. A fresh potato contains about as much water as the Russet. These results show the reason that apples when manufactured into cider produce nearly their own bulk of juice, a fact which has often puzzled many who merely regarded the solid nature of the fruit.

A striking difference in the composition of the apple and potato, is the entire adsence of starch in the former, while in the latter it constitutes ahout one half of the solid part. The apple, according to this analysis, is rather superior to the potato in the fat producing qualities, and which accords with the experience of some accurate farmers. The apple contains about twice as much of the compounds of nitrogen as the potato.

The Russets were found to contain a larger portion of tannic and gallic acids than other sorts. These acids impart a stringency, and are indicated by the black colour given to a knife of iron or steel used in cutting this fruit. The apple is rich in phosphoric and sulphuric acids and potash and soda. Hence we may infer that bone dust, ashes salt and plaster, would be likely to prove useful as portions of the manure applied to a bearing tree, in addition to what is already containd in yard manure.—*Transactions N. Y. Ag. Society.*

Recovering Dried Grafts.—It often happens that grafts of particular fruits are received in a dried or withered condition from being badly packed; and being supposed to be worthless are thrown away. The writer once received in autumn a small package of a new and rare sort of apple, from a distance of some hundreds of miles, without any protection at all, and they were quite thoroughly *seasoned*. They were encased in moss, and buried a few inches beneath the surface of the earth on a dry spot of ground. By spring they had gradually imbibed moisture, and had become plump again, and on being set, every graft grew. Efforts of this kind often fail in consequence of applying the moisture too copiously and suddenly. Shoots in so withered a condition should receive it so gradually as to require some weeks at least for the completion of the process.—*Albany Cultivator.*

To prevent the attack of the "Onion Grub."—The growth of the onion is frequently prevented and the plant sometimes destroyed by a worm which attacks it as soon as it appears above ground. A correspondent of the *Gardener's Chronicle* states that he has applied nitrate of soda with good effects in preventing the ravages of this insect. He used half a pound of the salt to a gallon of water, and applied eight gallons to a bed of ten yards in length. He states that it checked the progress of the worms, and the crop turned out well.

Scientific.

HOW COAL WAS MADE.

Geology has proved that, at one period, there existed an enormously abundant land vegetation, the ruins and rubbish of which carried into seas, and there sunk at the bottom, and afterwards covered over by sand and mud beds, became the substance which we now recognize as coal. This was a natural transaction of vast consequence to us, seeing how much utility we find in coal, both for warming our dwellings and for various manufactures, as well as the production of steam, by which so great a mechanical power is generated. It may naturally excite surprise that the vegetable remains should have completely changed their apparent character, and become black.—But this is explained by chemistry; and part of the marvel becomes clear to the simplest understanding when we recall the familiar fact, that damp hay thrown closely into a heap, gives out heat and becomes a dark color. When a vegetable mass is excluded from the air, and subjected to great pressure and bituminous fermentation is produced, and the result is the mineral coal, which is of various character accordingly as the mass has been originally intermingled with sand, clay or any other earthly impurities.

On account of the change effected by mineralization, it is difficult to detect in the coal the traces of a vegetable structure ; but these can be made clear except the highly bituminous caking coal, by cutting or polishing it down into thin transparent slices, when the microscope shows the fibres and cells very plainly. From distinctly isolated specimens found in the sandstones amidst the coal beds, we discover the nature of the plants of this era. They are most all of a simple cellular structure, and such as exist with us in small forms, (horse tails, club mosses and ferns.) but advanced to an enormous magnitude. The species are all long since extinct. The vegetation is generally such as now grows in clusters of tropical islands, but it must have been the result of high temperature, obtained otherwise than that of the tropical regions now is, for the coal strata are found in the temperate and even the polar regions.

The conclusion, therefore, to which most geologists have arrived is, that the earth, originally an incandescent or highly heated mass, was gradually cooled down, until the carboniferous period it fostered a growth of terrestrial vegetation all over its surface,to which the existing jungles of the tropics are barrenness in comparison. The high and uniform temperature, combined with a greater proportion of carbonic acid gas in the manufacture, could not only sustain a gigantic and prolific vegetation, but also create dense vapors, showers and rains; and these again gigantic rivers, periodical inundations and deltas. Thus all the conditions for extensive deposits of wood, in estuaries, would arise from the high temperature ; and

circumstances connected with coal measures points to such conditions.—*Chamber's Miscellany.*

AN IRREVERENT SPARROW.

Amongst other experiments going on some time ago in the Observatory enclosure, were some by which Mr. Glaisher sought to discover how much warmth the earth lost during the hours of night, and how much moisture the air would take up in the day from a given surface. Upon the long grass within the dwarf fence were placed all sorts of odd substances in little distinct quantities. Ashes, wood, leather, linen, cotton, glass, lead, copper, and stone, amongst other things, were there to show how each affected the question of radiation. Close by, upon a post, was a dish, six inches across, in which every day there was punctually poured one ounce of water, and at the same hour next day as punctually was this fluid re-measured to see what had been lost by evaporation. For three years this latter experiment had been going on, and the results were posted up in a book; but the figures gave most contradictory results. There was either something very irregular in the air, or something very wrong in the apparatus. It was watched for leakage, but none was found, when one day Mr. Glaisher stepped out of the magnet-house, and, looking toward the stand, the mystery was revealed. The evaporating dish of the philosopher was being used as a bath by an irreverent bird!—a sparrow was scattering from his wings the water left to be drunk by the winds of heaven. Only one thing remained to be done; and the next minute saw a pen run across the tables that it had taken three years to compile. The labor was lost—the work had to be begun again.

Gaudalupe Mine.—The California *Courier* gives the following description of a quick-silver mine. If reliable—of which it would seem there can be but little doubt—the owners have certainly "struck a vein:"—"A gentleman who has recently made an examination of this mine, has placed upon our desk a specimen of the ore now obtained there, which is fully equal to the richest and best cinnabar we have ever seen. From him we learn that the vein is daily increasing, and is found to extend in all directions, presenting on every side a nearly solid mass of ore, yielding from 60 to 85 per cent of pure mercury. The mine is reached by a beautiful road, good at all seasons of the year. It is in the same hill as the New Almaden mine, four miles distant from it, and only about eight miles from the city of San Jose. The company are now erecting extensive smelting apparatus, and in a short time will be able to run out some thousands of pounds of quicksilver per day. The value of the quicksilver obtained from this and the New Almaden mines this year, will amount to several millions of dollars. Our readers may not be aware that it requires two pounds of quicksilver to produce one pound of silver; and that hundreds of silver mines, in Mexico and South America, cannot now be worked in consequence of the impossibility of obtaining this supply. The demand for quicksilver in this country, will, as the rich placers fail, and the quartz becomes more worked, and silver mines are opened, be very great; and, except for these cinnabar mines in our midst, impossible to be supplied. But those mines will not only fully supply us, but have a surplus to be sent abroad. Thus California not only yields to the world the richest treasures of gold, but in her quicksilver she holds in her hands the key to unlock the silver deposits of our own and other States, and the means to extract the finest particles of gold from our auriferous soil and gold-bearing rocks."

It is a vulgar notion that politeness is only required towards superiors. But the truth is, that every man ought to regard his fellow man, or friend, as his superior, and treat him accordingly. Such feeling the real gentleman always has.—"Let each esteem others better than himself," says an Apostle. This is the very soul of good manners.

It is reported in the scientific world, that a very beautiful, and, if we consider it, a very wonderful, experiment has been tried, or discovery made in Europe, and verified, by the *savons* of Berlin and Paris. It is this:—The needle of a galvanometer, or machinery to measure galvanism, has been moved, many degrees, by the mere action of the human will! For example, the operator, standing near the instrument, wills the needle to move one way or the other, and it obeys, moving a greater or a less number of degrees, according to the strength of his will.

How Ruminants Chew their Cud.—When these animals (ruminants) feed, they swallow their aliments at first without having chewed them. These substances then enter into the paunch, and there accumulate; thence they pass into the second stomach, (reticulum); but after having remained there for a certain time, they are carried back into the mouth to be chewed, and afterwards swallowed again; and when they descend again into the stomach, they no more enter the paunch or reticulum, but go directly to the *manyplies*, (third stomach) from which they pass into the fourth stomach or *rennet-bag*, where they are digested.

At first one is astonished to see food pass at one time into the paunch and reticulum, at another into the *manyplies*, (third stomach,) according as it had been swallowed for the first time, or after it has been regurgiated; and one is tempted to attribute this phenomenon to a sort of tact with which the openings of these different digestive pouches seem to be endowed. But there is nothing of the kind; this result being the necessary consequence of the anatomical arrangement of the parts. The œsophagus terminates below in a species of gutter, or longitudinal slit, which occupies the upper part of the reticulum (second stomach) and the paunch, and is continued to the *manyplies*. Ordinarily, the edges of the slit of which we have just spoken lie close together, and then this gutter constitutes a perfect tube, which leads from the œsophagus into the *manyplies*. (third stomach;) but if the alimentary ball swallowed by the animal is solid, and somewhat large, it distends this tube, and separates the edges of the opening through which the œsophagus communicates with the two first stomachs; the food falls into these pouches; but if the alimentary ball be soft and pulpy, as is the case when mastication has been completed, the matter swallowed enters into this same tube without separating the edges of the slit, and reaches the third stomach.

It is by this mechanism that unchewed food, which the animal swallows for the first time, stops in the paunch and reticulum; while after it has been chewed

a second time, and well mixed with saliva, it penetrates into the *manyplies*.

"The mechanism by which aliment accumulated in the first stomach is carried back to the mouth, is also very simple. When regurgitation begins the reticulum contracts and presses the alimentary mass against the slit-like opening which terminates the œsophagus; then this opening enlarges so as to seize a pinch or portion of the alimentary mass, compresses it, and forms it into a small pellet, which engages in the œsophagus, the fibres of which contract successively from below upwards, to push forward the new alimentary ball into the mouth."—*Rushenberger's Elements of Mammalogy.*

General Science and Miscellany.

British Libraries.

1. *British Museum Library, London.*—There is probably no other public institution in Great Britain which is regarded with so great and general interest as the British Museum. By the variety of its departments, this splendid national depository and antiquities, meets in some way the particular taste of almost every class of society. The department of Natural History, in its three divisions of Zoology, Botany, and Mineralogy, contains a collection of specimens unsurpassed, probably unequalled, in the world. The department of antiquities is in some particulars unrivalled for the number and value of the articles it contains. But the library is the crowning glory of the whole. If, in respect to the number of volumes it contains, it does not yet equal the National Library of Paris, the Royal Library of Munich, or the Imperial Library of St. Petersburg—in almost every other respect, such as the value and usefulness of the books, the arrangements for their convenient and safe keeping, and, in fact, in every matter pertaining to its internal arrangements, the library of the British Museum, by the concurrent testimony of competent witnesses from various countries, must take rank above all similar institutions in the world. Well may the people of this country regard the Museum with pride and pleasure. The liberal grants of parliament, and the munificent bequests of individuals, are sure indications of a strong desire and purpose to continue and extend its advantages.

Some idea of the magnitude of the Museum, and of its vast resources, may be formed by considering that the buildings alone in which this great collection is deposited, have cost since the year 1823, nearly £700,000; and the whole expenditure for purchases, exclusive of the cost of buildings just named, is considerably more than £1,100,000. Besides this liberal outlay by the British Government, there have been numerous magnificent bequests from individuals. The acquisitions from private munificence were estimated, for the twelve years preceding 1835, at not less than £400,000. The latest considerable bequest was that of the Right Hon. Thomas Grenville: his library, which he gave to the Museum entire, was valued at £20,000.—The annual receipts of the institution of late years, from parliamentary grants and the interest of private legacies, have been about £50,000. The number of visitors to the Museum is immense. In the year 1848 they amounted to 897,985, being an average of about 3000 visitors per day for every day the Museum is open. On special occasions there have been as many as thirty thousand visitors on a single day.

This noble institution may be said to have originated in the bequest of Sir Hans Sloane, who, dying in 1752, left his immense collections of every kind to the nation, on the condition of paying £20,000 in legacies to different individuals; a sum considerably less than the intrinsic value of the medals, coins, gems, and precious metals of his museum. This bequest included a library of 50,000 volumes, among which were 3566 volumes of manuscripts in different languages; a herbarium of 334 volumes; other objects of natural history, to the number of six-and thirty or forty thousand, and the house at Chiswick, in which the whole was deposited. The Harleian collection of manuscripts, amounting to 76000 volumes, chiefly relating to the history of England, and including, among many other curious documents, 40,000 ancient charters and rolls, being about the same time offered for sale, parliament voted a sum of £30,000 to be raised by lottery, and vested in trustees, for the establishment of a National Museum. Of this money, £20,000 were paid to the legatees of Sir Hans Sloane, £10,000 were given for Harleian Manuscripts, and £10,000 for Montague House as a receptacle for the whole. Sloane's Museum was removed thither with the consent of his trustees. In 1797, George II., by an instrument under the great seal, added the library of the kings of England, the printed books of which had been collected from the time of Henry VII., the manuscripts from a much earlier date. This collection was very rich in the prevailing literature of different periods, and it included, amongst others, the libraries of Archbishop Cranmer, and of the celebrated scholar Isaac Casaubon. His majesty annexed to his gift the privilege which the royal library had acquired in the reign of Queen Anne, of being supplied with a copy of every publication entered at Stationers' Hall; and in 1759 the British Museum was opened to the public.

The value of the library has greatly enhanced by magnificent donations, and by immense parliamentary purchases. In 1763, George III. enriched it with a collection of pamphlets and periodical papers, published in England between 1640 and 1660, and chiefly illustrative of the civil wars in the time of Charles I., by whom the collection was commenced. Among other valuable acquisitions may be mentioned Garrick's collection of old English plays, Mr. Thomas Tyrwhitt's library, Sir William Musgrave's collection of biography, the general library of the Rev. C. M. Cracherode, the libraries of M. Ginguene, Baron de Moll, Dr. Burney, and Sir R. C. Hoare; and above all, the bequest of Major Arthur Edwards, who left to it his noble library, and £7000 as a fund for the purchase of books. Four separate collections of tracts, illustrative of the revolutionary history of France, have been purchased at different times by trustees, in the exercise of the powers with which they are invested. One of these was the collection formed by the last president of the parliament at Bretagne, at the commencement of the revolution; two others extended throughout the whole revolutionary period; and the fourth consisted of a collection of tracts, published during the reign of the Hundred Days in 1815—forming altogether a body of materials for the history of the revolution as complete in regard to France as the collection of pamphlets and tracts already mentioned is with respect to the civil wars of England in the time of Charles I. Another feature of the Museum Library is its progressive collection of newspapers, from the appearance of the first of these publications in 1588. Sir Hans Sloane had formed a great collection for his day. But to this way added, in 1818, the Burney collection, purchased at the estimated value of £1000; and since that period the Commissioners of Stamps have continued regularly to forward to the Museum, copies of all newspapers deposited by the publishers in their office.

In 1823, the Royal Library collected by George III. was presented to the British nation by his successor George IV., and ordered by parliament to be added to the library of the British Museum, but to be kept for ever separate from the other books in that institution. The general plan of its formation appears to have been determined on by George III., soon after his accession to the throne; and the first extensive purchase made for it was that of the library of Mr. Joseph Smith, British consul at Venice, 1762, for which his majesty paid about £10,000. In 1763 Mr. (afterwards Sir Frederick) Barnard, the librarian, was despatched to the continent by his majesty; and as the Jesuits' houses were then being suppressed and their libraries sold throughout Europe, he was enabled to purchase, upon the most advantageous terms, a great number of very valuable books, including some very remarkable rarities, in France, Italy, and Germany. Under the judicious directions of Mr. Barnard, the entire collection was formed and arranged; it was enlarged during a period of sixty years, by an annual expenditure of about £2000, and it is in itself, perhaps, one of the most complete libraries of its extent that was ever formed. It contains selections of the rarest kind, particularly of scarce books which appeared in the first ages of the art of printing. It is rich in early editions of the classics, in books from the press of Caxton, in English history, and in Italian, French, and Spanish literature; and there is likewise a very extensive collection of geography, and of the transactions of learned academies.—The number of books in this library is 65,250, exclusively of a very numerous assortment of pamphlets; and it appears to have cost, in direct outlay, about £130,000, but it is estimated as worth at least £200,000.

The nucleus of the department of manuscripts at the British Museum was formed by the Harleian, Sloanean, and Cottonian collections. To these George II. added, in 1757, the manuscripts of the ancient royal library of England. Of these, one of the most remarkable is the "Codex Alexandrinus;" a present from Cyril, patriarch of Constantinople, to King Charles I. It is in four quarto volumes, written upon fine vellum, probably between the fourth and sixth centuries, and is believed to be the most ancient manuscript of the Greek Bible now extant. Many of the manuscripts came into the royal collection at the time when the monastic institutions of Britain were destroyed; and some of them still retain upon their spare leaves the honest and hearty anathemas which the donors denounced against these who should alienate or remove the respective volumes from the places in which they had been originally deposited. This collection abounds in old scholastic divinity, and possesses many volumes, embellished by the most expert illuminators of different countries, in a succession of periods down to the sixteenth century. In it are also preserved an assemblage of the domestic music-books of Henry VII., and the "Basilicon Doron" of James I. in his own handwriting. The Cottonian collection, which was purchased for the use of the public in 1701, and annexed by statute to the British Museum in 1753, consists of 861 manuscript volumes, including "Madox's Collections on the Exchequer," in ninety-four volumes, besides many precious documents connected with our domestic and foreign history, about the time of Elizabeth and James. It likewise contains numerous registers of English monasteries; a rich collection of royal and other orignal letters; and the manuscript called the "Durham Book," being a copy of the Latin Gospels, with an interlinear Saxon gloss, written about the year 800, illuminated in the most elaborate style of the Anglo-Saxons, and believed to have once belonged to the venerable Bede. The Harleian collection is still more miscellaneous, though historical literature in all its branches forms one of its principal features. It is particularly rich in heraldic and genealogical manuscripts; in parliamentary and legal proceedings; in ancient records and abbey registers; in manuscripts of the classics, amongst which is one of the earliest known of Homer's "Odyssey;" in missals, antiphonars, and other service-books of the Catholic Church; and in ancient English poetry. It possesses two very early copies of the Latin Gospels, written in gold letter; and also contains a large number of splendidly illuminated manuscripts, besides an extensive mass of correspondence. It further includes about three hundred manuscript Bibles or Biblical books, in Hebrew, Caldaic, Greek, Arabic, and Latin; nearly two hundred volumes of writings of the fathers of the church; and a number of works on the arts and sciences among which is a tract on the steam-engine, with plans, diagrams, and calculations by Sir Samuel Morland. The Sloanean collection consists principally of manuscripts on natural history, voyages and travels, on the arts, and especially on medicine.

In 1807 the collection of manuscripts formed by the first Marquis of Lansdowne was added to these libraries, having been purchased by parliament for £4925. It consists of 1252 volumes, of which 114 are Lord Burleigh's state papers, 46 Sir Julius Cæsar's collections respecting the reigns of Elizabeth and James I.; and 108 the historical collections of Bishop Kennet.—Other valuable collections are the classical manuscripts of Dr. Charles Burney, the Oriental manuscripts collected by Messrs. Rich and Hull, and the Egyptian papyri presented by Sir J. G. Wilkinson. It would be endless, however, to enumerate these treasures; we have indicated enough to convince our readers that the library of the British Museum is worthy of the nation to which it belongs.

The Retaliation.—The noblest revenge we can take upon our enemies is to do them a kindness; for to return malice for malice, and injury for injury, will afford but a temporary gratification to our evil passions, and our enemies will only be rendered the more bitter against us. But, to take the firm opportunity of showing them how superior we are to them, by doing them a kindness, or by rendering them a service, the sting of reproach will enter deeply in their soul; and, while unto us it will be a noble retaliation, our triumph will not unfrequently be rendered complete, not only by blotting out the malice that had otherwise stood against us, but by bringing repentant hearts to offer themselves at the shrine of friendship.

How to Make a Fortune.—Take earnestly hold of life, as capacitated for, and destined to high and noble purposes. Study closely the mind's bent for a labor or profession. Adopt it early, and pursue it steadily, never looking back to the turned furrow, but forward to the new ground, that ever remains to be broken. Means and ways are abundant to every man's success, if will and action are rightly adapted to them. Our rich men, and our great men, have carved their paths to fortune and fame by this eternal principle—a principle that cannot fail to reward its votary, if it be resolutely pursued. To sigh or repine over lack of inheritance, is unmanly. Every man should strive to be a creator, instead of inheritor. He should bequeath instead of borrow. The human race, in this respect want dignity and discipline. It prefers to wield the sword of valorous forefathers, to forgoing its own weapons. This is a mean and ignoble spirit. Let every man be conscious of the God in him, and the providence over him, and fight his own battles with his own

good lance. Let him feel that it is better to earn a crust, than to inherit coffers of gold. This spirit of self-nobility, once learned, and every man will discover within himself, under God, the elements and capacities of wealth. He will be rich, inestimably rich, in self-resources, and can lift his face proudly to meet the noblest among men.—*New York Sun.*

Fortune-telling is as much in vogue as ever in Paris. A book, which is said to have caused much observation, appeared there lately, which is thus described in the correspondence of the London *Literary Gazette*:—

"It consists of extracts from the voluminous writings of a poor *gentilhomme* of Brittany, during a period of upwards of sixty years, and each extract is a prediction of some one of the great political convulsions which have occurred in this country during that time. Never was there a more correct *Vates*; but Cassandra herself was not more disregarded than he. The downfall and execution of XVI., the horrors of the Terror, the power and overthrow of Napoleon, the revolution of 1830, and the republic of 1848, were all predicted years before they came to pass; but the poor prophet was set down as a madman by all his literary contemporaries, and during his lifetime not a single newspaper would consent to say any thing about his predictions. What is the most singular thing of all is, that he foretold (years ago, remember—when Louis Philippe was at the height of his power), that the proclamation of the republic would lead to the domination of a member of Napoleon's family, and so it has; though if any one only six months before Louis Napoleon's election had predicted the same thing, he would certainly have been set down as a lunatic. In consequence of this extraordinary foresight of our prophet, people have looked with no little concern to what he says for the future.—And alas! they have met with nothing very consolatory. We are, it seems, on the brink of a fearful social crisis, the consequence of which will be the complete destruction of European society as at present constituted; and this destruction is only to be effected by the shedding of rivers of blood, and the weeping of oceans of tears!"

Industry.—A lazy husband, or a wife, though rich as Crœsus, is a bad bargain in any rank of society, but unspeakingly so in the ranks of our operatives. Here everything depends upon effort. You cannot help the mechanic or laborer who will not help himself. Indolence, like drunkenness, cannot be elevated. The proverb of Solomon has been verified in all ages—"The drunkard and the glutton shall come to poverty, and drowsiness will cover a man with rags;" and not only men, but women too. Hundreds of families are now in the most abject wretchedness solely through their sloth and idleness. We would have all young men inquire what time their sweethearts rise in the morning, and how they spend their days; and the young woman to be just as inquisitive concerning their swains. It may not be very poetical to be thus prying, but it may save a world of trouble by-and-bye.

Hints to Young Ladies.—If any young woman waste in trivial amusements the prime season for improvement, which is between the ages of sixteen and twenty, they hereafter bitterly regret the loss, when they come to feel themselves inferior in knowledge to almost every one they converse with; and, above all if they should ever be mothers, when they feel their inability to direct and assist the pursuits of their children, they find ignorance a severe mortification and a real evil. Let this animate their industry, and let a modest opinion of their capacities be an encouragement to them in their endeavours after knowledge. A moderate understanding, with diligent and well directed application, will go much further than a more lively genius, if attended with that impatience and inattention which too often accompany quick parts. It is not for want of capacity that so many women are such trifling insipid companions, so ill qualified for the friendship and conversation of a sensible man, or for the task of governing and instructing a family; it is often from the neglect of exercising the talents which they really have, and from omitting to cultivate a habit of intellectual improvement; by this neglect they lose the sincerest pleasures, which would remain when almost every other forsakes them, of which neither fortune nor age can deprive them, and would be a comfort and resource in almost every possible situation of life.—*Mrs. Chapone.*

Maxims to guide a Young Man.—

Keep good company or none.

Never be idle. If your hands cannot be usefully employed, attend to the cultivation of your mind.

Always speak the truth.

Make few promises.

Live up to all your engagements.

When you speak to a person, look him in the face.

Good company and good conversation are the very sinews of virtue.

Good character is above all things else.

Never listen to loose and infidel conversation.

You had better be poisoned in your blood than in your principles.

Your character cannot be essentially injured except by your own acts.

If any one speaks evil of you, let your life be so virtuous that none will believe him.

Always speak and act as in the presence of God.

Drink no kind of intoxicating liquor.

Ever live, misfortune excepted, within your income.

When you retire to bed, think over what you have been doing during the day.

Never speak lightly of religion.

Make not haste to be rich if you would prosper.

Small and steady gains give competency with tranquility of mind.

Never play at any kind of game.

Avoid temptation, through fear that you may not withstand it.

Earn your money before you spend it.

Never run into debt, unless you see a way to get out again.

Never borrow if you can possibly avoid it.

Do not marry till you are able to support a wife.

Never speak evil of any one.

Often think of death, and your accountability to God.

Read over the above maxims at least once a week (Saturday night). P. S.

—*Gazette and Courier.*

A Mountain Cat.—A gentleman yesterday brought into our office one of the most curious animals we have ever seen. He was caught in a trap baited with sugar, on the North Fork of the Yuba. Some have named this species of animal the mountain cat; but, with the exception of some of his habits, he seems to resemble the cat very little. He is about two and-a-half feet long, one-half of which length is his tail, which is ringed with alternate white and black. His shape more resembles the kangaroo than any other animal, his haunch portions being much larger than his breast. His head is small, with very large, glittering, prominent eyes, and a nose somewhat approaching the form of that of the ichneumon. He is as flexible as a weasel. With short legs and fine fur, and exceedingly clean and neat *toilette*, he is really one of the nice young men of the animal tribe. He is a curiosity, being unlike any thing we have before seen in any zoological collection or in a wild state. His color is grey, not so silvery as the grey squirrel, and the most inquisitive little Paul Pry that has ever looked in upon us. He is a far handsomer and cleanlier animal than the coon, in all graces is as much his superior as is "Hyperion to a Satyr," and when we establish a new political party, shall probably instal him instead, as the insignia of our embodied principles.—*Alta California.*

African Chiefs.—At a late meeting of the Ethnological Society there were introduced a Zuloo chief, and also a Kaffir chief; his wife, of the tribe of Amamponda, an infant child (about a month old), brought over to this country by Mr. Caywood, and introduced to the society by Mr. Tyler, with a view the more clearly to illustrate the paper submitted to them by Earl Grey. The appearance of these interesting strangers in the rooms attracted general attention. The Zuloo chief is a man of fine muscular proportions, standing nearly six feet in height, the limps being finely proportioned and displaying a symmetry not met with in the black tribes of other parts of the torrid zone. The Kaffir chief was somewhat taller than the Zuloo, being about six feet and wearing the emblems of the rank of his caste, which was particularly marked by the circular natural coronet formed of matted hair, on the top of the head, which is considered to be an object of great distinction by its possessor. The war dress of both chiefs was composed of the same materials, consisting of numerous tails of the mountain cats, strung together, and hanging from the neck to below the knee; but a peculiarity very remarkable in both of them was the way in which they carried about their snuff or scent boxes, being the small horn of some animal peculiar to their country, ingeniously covered with a lid, and the small end being passed through a hole cut in each ear, from which place it is taken as occasion requires. In the course of the evening they exhibited their war dances, and also their mode of attack upon their enemies, the two chiefs being placed antagonistic to each other, but it required the constant interference of the interpreter to prevent what was gone through in sport for the gratification of the spectators from becoming earnest, almost from natural instinct to those who were engaged in it. Indeed, the war cry, the appearance of the features, the extendid nostrils, and ready and certain aim, gave it all the aspect of a fatal reality. The Kaffir chief also exhibited his mode of attack upon cattle, armed with a buckler of buffalo hide and a spear, which he performed with great dexterity. It appeared that these people had been brought to London by railway, and in their own language, they described their wonder at the velocity with which they travelled. On it being explained to them that the carriages were not moved by bullocks or any other cattle, but by steam produced from fire and water, the Zuloo wanted to know if so, how it was that the pot in which he boiled his food did not run off the fire—a question, it is needless to say, that caused great amusement.

A Good Character.—A good character is to a young man what a firm foundation is to the artist who proposes to erect a building on it; he can build with safety, and all who behold it will have confidence in its solidity, a helping hand will never be wanted; but let a single part of this be defective, and you go a hazard, amidst doubting and distrust, and ten to one it will tumble down at last, and mingle all that was built on it in ruin. Without a good character, poverty is a curse—with it, is scarcely an evil. Happiness cannot exist where a good character is not. All that is bright in the hope of youth, all that is calm and blissful in the sober scenes of life, all that is soothing in the vale of years, centres in, and is derived from, a good character. Therefore acquire this as the first and most valuable.

There is but one road to permanent happiness and prosperity, and that is the path of unspotted integrity, of high-souled honour, of the most transparent honesty.

Pitmen and Mathematics.—A paragraph has appeared in the papers, stating the fact, that the booksellers of Newcastle had observed that most of the standard mathematical works were purchased by pitmen. The following anecdote is in point. Some years since, a gentleman on his passage from Newcastle to Shields in a steam-boat, went into the engine room, and found one of the books mentioned—namely, "Emerson's Fluxions"—lying on the table rather black and smutty, evidently much read. He asked the young engineman who read the book? He answered that he did when he had time. Rather surprised at the fact, and presupposing that he was a young man of superior talent, he questioned him upon the subject, stating that himself had studied these matters at the University—had passed, he believed, a fair examination—and obtained a creditable degree. With this prelude they entered freely into conversation; and from that time the stranger used all his influence to bring the studious engineman into notice. The engineman is now a distinguished mathematician, and the author of many of the very works alluded to. He had a short time previous to this interview "risen rfom a bank-trapper to a breaksman" in a Newcastle coal pit, as stated in evidence before the Lord's committee the last session; and is now—Professor Hann, of King's College!—*Gateshead Observer.*

The Bible.—The Bible itself (as Professor Maclagan has said) is a standing and an astonishing miracle. Written fragment by fragment throughout the course of fifteen centuries, under different states of society and in different languages, by persons of the most opposite tempers, talents, and conditions, learned and unlearned, prince and peasant, bond and free; cast into every form of instructive composition and good writing—history, prophecy, poetry, allegory, emblematic representation, judicious interpretation, liberal statement, precept, example, proverbs, disquisition, epistle, sermon, prayer—in short, all rational shapes of human discourse, and treating, moreover, of subjects not obvious, but most diffi-

cult—its authors are not found, like other writers, contradicting each other upon the most ordinary of fact and opinion, but are at harmony upon the whole of their sublime and momentous scheme.

Early Rising.—A talented physician remarks that—"Early rising is the stepping stone to all that is great and good. Both the mind and the body are invigorated by the practice, and much valuable time is gained that is lost to the sluggard. It is the basis upon which health and wealth are founded. The early morning is the best period for reflection and study; for it is then, after refreshing sleep, that the mind is most vigorous and calm. The statesman, as well as the merchant, arranges his plan for the coming day, and all passes smoothly; while he who wastes his morning in bed loses much of the most valuable commodity in life—time—*which is never regained.* Early rising will often make the poor man rich; the contrary will too often beggar the wealthiest. It will do much towards making the weak strong; and the reverse will enfeeble the strongest. Second sleep often produces headache and languor. There is nothing more true than that—'He that loses an hour in the morning is seeking it the remainder of the day.' All our greatest men have been early risers; for instance—Newton, Franklin, Wellington, Shakspeare, Milton, Reynolds, Hunter, Eldon, Erskine."

Moral Influence of Babies. — The influence exerted unconsciously upon a family, by a little child, especially if it be beautiful, gentle, and good, is not easily estimated. Few persons are aware or take time to think, how much ill-feeling is prevented, how much good nature and affectionate emotion are evoked, how much dullness and gloom are banished by the odd ways and sweet innocencies of the dear toddling baby. Even the rebuke which is slily administered over baby's shoulders to some older body, loses its vinegar and provokingness. Often to the brother or father, impatient for his meal, that he may get to business, is cheated into forgetfulness, while holding baby and listening to its funny attempts to talk. How we should like to know, can a man grumble that his steak is over or undone, or that a button is off, or that his wife has made a bill at the dry goods store, while baby is crowing in his face, or clambering on his knee? Heaven's blessing on all good babies we say.

Curious.—A few days ago Mr. Anthony Marshall, a farmer in Dumfries, during a days thrashing of wheat, killed the enormous number of 150 rats, which were laid in a pile on the barn-sill; that day and next there was a keen frost, and the day after not a dead rat was to be seen, and no dogs or cats had been near! There is no accounting for their disappearance but upon the supposition that the remaining live rats carried them away—a habit they are known to possess.

Rice Blanc Mange.—The following receipt for cooking rice, is worthy of preservation by every housekeeper—it presents a nutricious and agreeable article of diet for the invalid and a delightful and cheap dessert for the family table. Boil half a pint of whole rice in as little water as possible, till all the grains lose their form, and become a solid mass. Next put it in a sieve, and drain and press out all the water. Then turn it into a saucepan, and mix with it a large half pint of rich milk, and a quarter of a pound of powdered sugar. Boil it again till the whole is reduced to a pulp. Then remove it from the fire, and stir in (while hot) a wine-glass of rose water. Dip your moulds into cold-water, and then fill them up with the rice; set them on ice, and when quite firm and cold, turn out the blanc mange, and serve it up on dishes with a sauce tureen of sweetened cream flavored with nutmeg. Or you may eat with a boiled custard, or with wine sauce. You may mould it in large breakfast cups. Always dip your moulds for a moment in luke-warm water before you turn out their contents.

Varnishes for Coating Metals.—Digest one part of bruised copal in two parts of absolute alcohol; but as this varnish dries too quickly, it is preferable to take one part of oil of rosmary, and two or three parts of absolute alcohol. This gives a clear varnish as limpid as water. It should be applied hot, and when dry, it will be found very hard and durable

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For Varnishing Furniture.—The fused copal dissolved in oil of turpentine is the most economical. If the copal has not been kept a sufficient time in the state of fusion, the varnish made with it remains soft, for some time after it is dry, and afterwards peels off.

Editor's Notices, &c.

GRANTS TO PROVINCIAL AGRICULTURAL ASSOCIATIONS For 1851.

The Secretary has been informed of grants made by the following county agricultural societies, up to the present date, March 6th.

Middlesex £25; Norfolk £20; York £30; Carleton £25; Prince Edward £20; Frontenac, Lennox, and Addington £25.

FRUIT TREES, SEEDS, &c.

As the season for Spring operations has arrived, we observe, in answer to some inquiries, that all kinds of Agricultural and Garden seeds, flowers, &c., may be obtained of Mr. James Fleming, *Yonge Street Nursery*: Seedsman, by appointment, to the Agricultural Association of Upper Canada, who has a large assortment of imported and native seeds.

Mr. Lesslie, *of the Toronto Nursery*, can supply the various kinds of fruit and ornamental trees, adapted to this climate: and his assortment is very extensive. Mr. Dougall's *Establishment at Amherstburg*, is also well known: and there are besides a few smaller nurseries, in different sections of the Province,—where most of the common varieties of fruit can be obtained.

R. F. C.—received: your communication in our next

INQUIRER.

"*Morton's Cyclopedia of Agriculture,*" is the best work of its kind in the English language. It embraces all the details of agriculture, practical and scientific, written by the most eminent farmers and scientific men of the day. It is an *original* work, and not as many such productions are, in great measure, a compilation. It can be procured in monthly parts of Mr. Maclear, bookseller, of this City, or of any of his travelling agents in the country.

EXHAUSTING EFFECTS OF PLASTER.

H. A.—Your case is a very common one. No manure containing only one or two ingredients can invariably meet all the wants of vegetation. Your soil was evidently deficient in sulphuric acid and lime—the constituents of Plaster —that is, *sulphate of lime,* which enters largely into the composition of clover, and such like plants. Hence your extraordinary but short lived success with such crops.—But you have been removing from the soil in wheat, rye, barley, oats, &c., some half dozen important substances and have returned in the Plaster only two, and those not of the first moment to grain crops. No wonder then that the soil is exhausted, and that Plaster does no good. A fertile soil must contain a sufficient amount of eight or ten different substances, each of which is more or less carried off in every crop, the absolute amount of which involves, of course, exhaustion of the land. For grain crops your soil require *phosphates;* for roots, *alkalies.*—Good farmyard dung is unquestionably the best fertiliser for general purposes, as it contains, more or less, all the constituents of plants. But as its supply is too commonly insufficicient, recourse must be had, to bones, guano, wood ashes, soot, &c.: when practicable, we advise the ploughing in of clover or buckwheat, with as liberal, previous dressing of such kinds of manure as can be obtained as possible; seed down with a grass crop, and pasture for a few years. The land will then be again "in heart," and may be kept so by judicious cropping and manuring.

THE GOOSEBERRY.

G. F.—The nurserymen about Toronto and elsewhere, can no doubt supply most, if not all the sorts you require. The gooseberry is not naturally well adapted to this climate, our summers being too hot and dry. Plant in a cool and moist situation, protected as much as possible from the rays of the midday sun, in a *stiff* soil. Cut away the wood freely, mulching with hay and saltpetre, or common salt, will prove advantageous. Even in the moist climate of Lancashire, where the largest gooseberries in England are raised; particular attention is paid to the thinning out of the shoots and keeping the ground moist and shaded, with moss, &c. Our correspondent will find more information in our volume for 1849, page 102, by a Canadian gardener.

STEPHEN'S FARMER'S GUIDE.

The 14th number of this cheap and excellent publication contains a steel engraving of a Short Horn Ox, and much useful information on the management live stock; modes of sowing seeds, and the laws of vegetation, illustrated by numerous cuts.—Toronto: H. Rowsell.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his his farm 2½ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirklearington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Bull Meteor, these are Bates's Bulls, and their reputation as stock getters are two well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 8 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy, near Albany, N. Y.

NOTICE.

Parties requiring either a FARM MANAGER OR GARDENER, or one to act in both capacities, may hear of a respectable and well qualified person, by applying (if by letter, *post-paid*) to our office. We also know a young man recently from Scotland, possessing most satisfactory testimonials, that would be happy to engage with any respectable party, requiring a person of industrious habits and agricultural skill.

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

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All remittances should be forwarded to William McDougall, Proprietor, Toronto.

All communications are expected to be pre-paid.

SPRING OPERATIONS.

We have now arrived at what may be termed, in many respects, the most interesting and important period of the agricultural year. To the farmer spring is peculiarly the season of active exertion and hopeful enjoyment; and the final results of all his labor and anxiety, will be mainly influenced by the manner in which he now conducts his necessary and important operations.

In the cultivation of any crop, whether grain or roots, among the first and essential conditions may be named, *a deep and finely pulverised seed bed*. Not only should all noxious weeds be destroyed by frequently stiring the soil, but a sufficient depth should be obtained to enable the roots of plants freely to extend themselves in search of food and moisture; an object of the greatest consequence in a climate like ours. Much of the destructive power of drought, so frequently experienced, is occasioned by a shallow and slovenly tillage.

The selection of *clean and perfectly matured seed*, may also be placed, among the essential conditions of success. This is a matter seldom attended to as it ought to be; while some neglect it altogether, hence the inferior quality and diminished quantity of grain at harvest, with a co-

pious admixture of weeds and rubbish. The experience of centuries and of all countries, has fully established the advantages of a frequent change of seed, both as to variety and soil. The farmers of this country very much need increased facilities for securing this object; which can be best effected, perhaps, through the agency of societies. The Board of Agriculture, when got into operation, will we trust, make this important subject one of special consideration. By exercising a reasonable care in the choice and preparation of seed, in connection with adequate culture and judicious manuring, the grain crops of Canada may be improved in quantity and quality to an extent of which it would be difficult to form an adequate conception.

As to the precise time for sowing, no absolute rule can be laid down; since much must depend upon the character of the particular season, and other causes producing climatic differences, such as the state of the soil, elevation, aspect, &c. This much, however, may be safely said, the earlier *spring* crops are got into the ground the better, provided vegetation suffer no serious check by any severe, subsequent changes of temperature. It is always proper to sow, when the ground is in good working condition and the skies propitious. In this country, owing to the ill-drained state of the land and neglect of fall ploughing, much of the spring grain is frequently sown too late. Draining, therefore, is the only certain remedy.

Barley requires dry, sound land, previously ploughed in the fall, and worked thoroughly in the spring. In most situations it should be sown by the middle or latter end of the present month. Last year this grain was very inferior in Upper Canada; with proper precautions however, a much more satisfactory result may be reasonably anticipated the present year. This is a crop that will usually repay all reasonable pains bestowed upon it.

Peas require good land and should be sown in rows 10 or 12 inches apart, particularly if the land be infested with weeds. Row culture has the double advantage of admitting a free access of light and air, while it allows of the working of the ground during the important period of early growth.

Grass seeds should be sown this month; clover can scarcely be sown too early, and a liberal amount of seed is by far the most remunerative. Grass seeds require but a slight covering of fine earth, and it is a good practice to consolidate the ground with a roller.

We would strongly urge upon our readers the importance of paying greater attention to the raising of roots, for the feeding of cattle. It is impossible to sustain improved breeds without a liberal supply of nutritious food; even the ordinary breed of the country may be made much finer animals and far more profitable by adopting such a course. A few acres of turnips, carrots, mangel-wurzel, &c., properly managed, will, in ordinary seasons, yield a large and remunerating return. The great thing to be attended to in such crops as these, is to manure liberally and cultivate thoroughly; in this manner one acre may be made to produce as much as two or three, under slovenly treatment. Frequently stirring the ground between the rows during the period of growth is found highly beneficial to the crop. The greatest care should be taken to select fresh and genuine seed, and to test its vitality before sowing. Much loss and disappointment might thus be obviated.

NIAGARA DISTRICT AGRICULTURAL SOCIETY.

The annual meeting of the members of this Society was held at St. Catharines, April 5th, 1851;—when John Lemon, Esq., and William McMicking, Esq., were re-elected; the former as President, the latter as Secretary. Edward Jones, Sam'l Parker, and Jas. Williams, Esqrs., Vice-Presidents. It is a rule of this Society that every member is a director; the annual subscription being one pound.—The following resolution was unanimously adopted.

"That this Society tender to the Senate of the University of Toronto, their most hearty thanks, for the liberal grant of a portion of the University grounds, recently made by that body, to the Board of Agriculture, for the purpose of an Experimental Farm. And this Society hail

with unfeigned satisfaction, the prospect now opening to the view of Agriculturists, in the contemplated appointment of a Professor of Agriculture in the Provincial University; and the fostering care extended to this important branch of Canadian industry, by the Government and Provincial Legislature."

THE EFFECTS OF DEEP AND THOROUGH CULTIVATION ON THE GROWTH OF GRAIN.

In a recent number of the *Agricultural Gazette*, Mr. Hewitt Davis, the well known English agriculturist, has directed public attention to a system of cultivation, adopted in a central portion of England with apparently extraordinary success. We will endeavor to give our readers an idea of the system in as concise a manner as possible.

"The ground is first laid out in steches of five feet, each of which is thus appropriated,—one half is given to growing three rows of wheat, at intervals of one foot. The other half left to admit of being worked as follows: as soon as the young wheat shows, this part is trenched two feet deep, and to within six inches of the young wheat. The top soil being placed undermost and the bottom uppermost. In this state the wide intervals lie all the winter exposed to the action of the frost and atmosphere, which act beneficially on newly turned up earth. In the spring, this space is again turned over with the fork one spit deep, and has the cultivator run through it as often as the incrustation at the surface calls for it. In this period, so long as the growth permits, the young wheat receives several horse hoeings. As soon as the wheat is harvested, the fallowed space is again turned over with the fork, and levelled, and channels are made by a three-wheel presser to receive the seed, which is carefully dropped, grain by grain, three inches apart, at the rate of two pecks per acre. In this way upwards of 32 bushels of wheat have been grown from the same land, and without manure, for five successive years."

The following is the cost per acre, and the return, as actually obtained the last year of the five.

THE OUTLAY.

One double-digging of the fallow ground being 2 feet of every 5 feet,	£1	10	0
Two single forkings,	1	0	0
Pressing, sowing, hoeing, carrying, threshing and rates,	2	1	0
Seed, 2 pecks,	0	2	6
	£4	13	6

RETURN.

Wheat, 34 bushels at 5s. per bus.	£8	10	0
Straw, 1 ton 12 cwt. at 40s.	3	4	0
	£11	14	0

Now if £3 per acre be added for rent, interest on capital and contingencies, there will remain a clear balance of profit of £4 per acre. Manure in this estimate has not been charged, as none was employed. But it is a self-evident proposition, to all that have any acquaintance, either with the science or practice of agriculture, that soils are liable to deterioration by constant cropping, unless adequately manured. No cultivation, however deep or thorough, can, in the long run, dispense with a return of fertilizing substances. But experience has shown that deep culture acts beneficially both in a mechanical and cheminal point of view. The breaking up of the sub-soil, exposing it to the influences of air and water, of light and heat, assists in the formation of new compounds, favorable to vegetation, as well as in correcting and decomposing such as are injurious. It would therefore appear that after allowing a sufficient annual expenditure for manure, the before mentioned system of cultivation would bear, even at the present reduced prices, a reasonable profit.

We are, however, fully aware, that such a mode of cultivation is altogether inapplicable to a country like Canada, and even in England, where labor is so abundant, it can be carried out at present only to a limited degree. Yet it is well that such investigations should be made; for they have decidedly an encouraging tendency; they point out the right direction we should pursue in order fully to develope the many yet hidden resources of the soil; which appears to be endowed with a power of production, commensurate with the increasing industry and intelligence of man. What better proof do we require of Creative wisdom and beneficence, which has so intimately connected man's physical well-being with the pursuit of knowledge and the practice of virtue?

REMEDY FOR THE GRIPES IN HORSES.—We need never loose a horse by gripes, provided we administer, when first attacked, 1 oz. each of spirits of nitre and paregoric, in a quart of warm water.

AGRICULTURAL SOCIETY OF THE UNITED COUNTIES OF FRONTENAC, LENNOX AND ADDINGTON.

At the annual meeting of the above Society recently held in the city of Kingston, the following address was delivered by the President, Angus Cameron, Esq. The *Argus* observes (whose remarks will be found after the address) that the Warden and members of the County Council were all present, and a number of the principal agriculturists of the district, among them the Rev. J. Allen, of Wolfe Island, a gentleman who brings much zeal and intelligence to bear on agricultural pursuits, "whose premises as a farmer, may be taken as a model, by farmers in Canada generally"; J. B. Marks, Esq., President of the Agricultural Association of Upper Canada, who has grown grey in promoting this ancient and most important of all arts; Messrs. P. Davy, W. Ferguson, Scott, Boys, Rankin, Cowan, Starks, &c., &c. We regret that we cannot find room for the resolutions, which confirmed the principal suggestions of the address; a document such as we should have anticipated from the well known zeal and ability of the author.

The complimentary terms in which the Treasurer, Wm. Ferguson, Esq., writes to us with reference to our humble labours, through the medium of the *Agriculturist*, to advance the agriculture of the country, cannot be otherwise than gratifying. And we hope soon to see such machinery put into operation as shall awaken enquiry and strengthen a spirit for improvement in all sections of the Province.

GENTLEMEN,—The design of the Legislature in passing the Act 8th Vic. chap. 54, as shown in the preamble, was "to give encouragement from the Revenues and people of Upper Canada to the science of Agriculture."

The same was the object in view in passing the Act 10 & 11 Vic. chap. 21, which provides for the incorporation of the Agricultural Association of Upper Canada.

The 7th clause of the Constitution of this Association declares that the object of the Association shall be—"The improvement of Farm Stock and produce, the improvement of tillage and agricultural implements, and other like matters; and the encouragement of domestic manufactures, of useful inventions applicable to agriculture or domestic purposes, and of every branch of rural and domestic economy."

The same is our object in endeavoring to maintain this and the several Township Societies within these Counties; and to what extent that important object has been attained by the proceedings of this Society, during the last twenty years of its existence, you, gentlemen, and those you represent here, have had all desirable opportunities of knowing; and with so much experience as a guide, the present is a favorable opportunity for making such alterations and amendments in the Constitution, Regulations, and future practice of the Society, as shall appear to you the most likely to promote the end in view.

Were I to take upon myself to give an opinion, I would say that the main difficulty met by agricultural societies throughout the Province, is a general apathy prevalent amongst Farmers, and a want of union as to the means best calculated to carry out the object which all profess to approve and desire.

If this is true, our first and most important duty is, so to manage this Society as to render it attractive to the majority of the people whom it is designed to benefit;—to make it a means of creating throughout its limits a praiseworthy rivalship in the good work of reproducing from the earth, by industry, skill, and economy, a bountiful supply for the inhabitants thereof, thus contributing at the same time to the general and individual good.

As the premium list has a tendency to give direction to the exertions of agriculturists, care should be taken that it contains no misdirection, and that the truly meritorious part of the labor be not left in the back-ground unnoticed, while some portion more incidental in character, and of less utility, is conspicuously awarded a premium.

If the apathy which has so long prevailed in these as well as other counties of the Province, could be replaced by a lively zeal and emulation and a consequent increase of this Society, there is good reason to believe that a spirit of liberality and inflexible impartiality, in duly awarding the honor of premiums, where properly merited, on the part of the managers of the society, would secure its future increase and prosperity.

The Township Societies may have done some good, and in future may improve, yet their doings fall short of the benefits that might arise from an exercise of the functions of a County Society.

Since the organiza ion of Township Societies it may be said that nothing has been done by the Counties but to draw and divide the Gover. ent allowance of money; this is but half doin. the business, and in reality leaving the most im r- tant half undone.

It would be an improvement if in future no Townships within these Counties should hold Cattle Shows on the same day, so as to give of us, as well as intending purchasers, an oppor

tunity of being present at each of the fairs, which cannot be the case when two of them are simultaneously held;—and some alteration is required in the Constitution, so as to give better facilities for holding an annual County Show, which should not take place until after the Township ones; this arrangement would be proceeding from the smaller to the greater, giving an opportunity of ascertaining, first, the best articles locally, then bringing them into a more extended competition.

All competitions for premiums at these exhibitions excite, as they are meant to do, a keen spirit of rivalship, and as, from the imperfection of man's nature, we are all more apt to observe the beauties than the defects of our own properties, it is often difficult to convince even the candid and honest that they have been justly dealt with in the awarding of premiums; therefore great pains should be taken by the Directors to afford all possible satisfaction in this respect, so that the society may maintain the confidence of the people, which is indispensable to its prosperity.

In addition to the foregoing remarks on the management of the society, it would be the duty of the President, and is my inclination to discharge that duty, if competent, to offer some suggestions of improvement on our present practice in farming as to stock, tillage, implements and the like.

The improvement of farm stock and produce, coupled as they are together in the foregoing constitution of the association, must likewise be coupled in our practical operations.

The natural wants of farm stock should be regularly supplied, whether that stock be horses, horned cattle, sheep, swine or poultry; they should have shade, salt, drink, and good pasture in summer; they should be well housed, carefully attended and fed in winter;—this can be most advantageously done on a productive farm, and there only can the keeping and rearing of good stock be rendered profitable.

As the keeping of good stock requires a productive farm to afford them these requisites, so does the productive farm require good stock, the better to convert its coarser products into cash.

Although the common breed of cattle in this country drag out a miserable existence, without being housed, with little attendance, and scanty fare, they would yield a better return to the owner under better treatment; it is a loss to neglect even the inferior description of stock, and as care is necessary, that care may as well be bestowed on an improved as on an inferior stock.

The growing of root crops is a highly profitable branch of good farming, and almost indispensable to the wintering of stock. In some parts of this Province as much as 800 bushels of turnips per acre is frequently raised: this quantity properly secured and regularly fed during the winter to ten head of cattle, at the rate of half a bushel per day each, with a proper allowance of hay and straw, would yield a good return to the dairy or the shambles, as well as in the superior health and growth of young stock. It may be said of both farm stock and produce that they yield remunerative returns in proportion to the nourishment which they judiciously and economically receive.

The manure heap is the great source or nourishment to the soil and its products: the housing and good feeding of stock gives increase to the heap beyond what it would arrive at without the system of housing and good feeding. Industry in collecting and skill in economizing manure, whether liquid or solid, is one of the most valuable lessons inculcated by the advocates of high farming. Every farmer should have a manure pit into which the liquid manure would run from all his cattle-houses, and into which should be collected everything convertible to the same purpose that could conveniently be obtained. "A penny saved is a penny gained." Every nuisance could there be converted into gold—even the Canada thistle as well as every other noxious weed that springs up. So careful of manure are the farmers become now in parts of Great Britain, that to prevent the escape of the more active gases so beneficial in stimulating the varied forms of vegetable re-production, they cover over with soil each little heap carted out on the fields, till it can be conveniently ploughed into the soil, digging little ditches around those heaps to catch the rains that wash them, and carefully returning this liquid again into those heaps.

The sooner we follow their example in this respect the better.

The proper keeping of superior stock, good ploughing, substantial fencing, an occasional covered drain, with plenty of open surface ones, a good supply of manure mixed into the soil, a seasonable sprinkling of lime, due regard to a rotation of crops, with skill and promptitude in securing them, constitute an important portion of good farming; and until we understand and practice these plain rudiments of the science, elaborate research into the modern discoveries in agricultural chemistry would but little avail in the balance sheet of profit and loss at the end of the season.

The Committee appointed at the special meeting of the society, held in October last, to purchase improved Stock, have reported their proceedings to the Secretary, which report with other communications will be read for the information of the Society.

Lastly, gentlemen, permit me to recommend that a change of President take place annually, as the honorable distinction of holding that office for a season would be likely to stimulate the influential and intelligent portion of the agriculturists to exert themselves in this common cause; and under this impression, I return you my sincere thanks for the honor done me in my appointment a year ago to the office, and now beg leave to tender you my resignation.

The Society having appointed their President to purchase a number of Durham Bulls, he procured four animals of the best description of that

class, and they are now within these Counties. The keepers of them are allowed £25 each, annually, a charge of one dollar to be made to Township Societies for the service of each when applied for, and of two dollars to all other parties. The animal in charge of Mr. John Ovens, at Waterloo, is said to be the finest in the Province. As a three years old, he took the first prize at the Provincial Agricultural Exhibition, held at Niagara last Autumn. He now weighs over 2000 lbs. Mr. Cameron also purchased for his own farm, the first, second and third premium Cows, and a flock of Leicester Sheep, all of which are splendid animals, and will, in a few years, with the others above mentioned, afford Agriculturists in this vicinity, an opportunity of increasing their stock of short horn Durham Cattle and Leicester Sheep, both very desirable and much wanted, our Counties being particularly adapted to the establishing of Dairy Farms, and to grazing.

The successful establishment and working of our Provincial Agricultural Association, has tended to infuse a spirit of enterprise for the improvement of stock, amongst the Farmers of Upper Canada which cannot fail to produce most beneficial effects, and which, we feel convinced, will continue to spread throughout the rural Districts in an increasing degree, as it must inevitably prove that such investments will yield a profitable return.

For a good Cow of pure Durham blood, £50 is not an unusual price, and for a Calf of the same breed, from £10 up to £30 is frequently paid. Fat Leicester Wethers were sold from this Province, as we have been informed, to the Boston Market, last year, which weighed 50 lbs. per quarter, and brought the farmer five pounds each. Surely this must pay, and ought to make some of our inert, stick-in-the-mud country friends, now resident within a circle of ten miles around our good city, bestir themselves in time to raise Leicester Sheep in time for export at the first whistle of the Locomotives which will be traversing our Counties *en route* "all the way to Boston" within the short space of three or four years. Let them make hay, therefore, while the sun shines, improve and increase their stock of good cattle and sheep, and *be ready for the Rail.* With one suggestion to the Farmer, we will drop things Agricultural, and that is, that being faithful believers in the wonder-working power of a well filled half bushel, good winter feeding, and comfortable stabling upon live stock of every kind, all animals intended to show and sell well, ought to be well cared for at a season when they most require the attention of their owners.

ADDRESS OF THE COMMITTEE AT BROCKVILLE TO THE PEOPLE OF CANADA.

To the farmers, mechanics, and all interested in the prosperity of Canada, look forward and prepare specimens of your Agricultural advancement, and evidences of your mechanical skill, for the great Provincial Exhibition, to be held at Brockville, on the 17th, 18th and 19th September, 1851.

In view of this Exhibition and to meet the necessary accommodation at Brockville, the Committee have secured a handsome Park Lot under grass, containing about twenty acres, in the vicinity of the centre of the Town, together with a beautifully sheltered wood land adjoining, affording ample accommodation for the Exhibition; designed as it is to bring prominently forward the handy work of the Country Lass, as well as the Town Maiden; the ingenious application of Machinery in the hands of the industrious Mechanic, as well as the evidence of careful and intelligent management on the part of the Stalwart Yeoman, the bone and sinew of the Agricultural interests of Canada.

No pains will be spared by the Committee of Management to sustain the creditable appearance which all classes in the United Counties of Leeds and Grenville are desirous of making in competition with the inhabitants of their Sister Counties in the Province, and in affording the necessary accommodation to Exhibit prominently the large collection of articles which will be brought forward upon this occasion, and which, it is confidently expected, will surpass any previous Exhibition in Canada.

While the Committee promises this much on their part, they cannot but reasonably look to all interested in the matter for countenance and support in an age when Telegraphs, Railroads, Steam Navigation, and the various appliances of modern invention, have happily supplied the place of the one-handled Plough, and the shoulder-bruising pole-propelled Durham Boats of days now happily bygone in the history of Canada.

In order that all within your reach and influence may meet the views of the Committee, it is necessary that you should take a lively interest in the production and exposition of every article in your vicinity, serving to exemplify skill, ingenuity or originality of design in the various economic arrangements of life; that not only the fire-side of the prudent house-wife of the happy Country house should be represented by specimens of weaving, knitting and sewing, together with the farmer's valuable dairy products, but that the less useful but more ornamental branches which constitute a luxury in our Country, should be exhibited; That the Embroidery frame, the Painter's Easel and the Crotchet-Needle, should each contribute and place specimens of its industry side by side with the Plough, the Loom and the Anvil, while at the same time the great mineral wealth of the Country should not be forgotten, and ample evidence of its importance be adduced in the specimens at the Exhibition.

In furtherance of these views, it is suggested that Messrs. ———, ———, ———, — ———, with power to add to their number, should be constituted a Committee to enlist as many as possible in this important work, to call the attention of Farmers and Mechanics within your locality and influence to this important matter, requesting

their co-operation and assistance in the preparation of articles for the Exhibition, and assuring them that in addition to the pleasing satisfaction of being the successful competitors in the friendly strife we are desirous of provoking. The Association will undoubtedly fix their premiums on as liberal a scale as possible.

Impress upon them that in a competition where articles of manufacture and mechanical skill will be received from all parts of Canada and the United States upon equal terms,* it will be a proud pre-eminence on their part, should they be the successful competitors; that it will be for the credit of their Country, that every exertion should be used to exhibit her growth and improvement.

While the eyes of all Canada will be upon the United Counties where the Exhibition is to be held, it is confidently expected that they will not appear in the back ground in an object where, upon former occasions, others have shown so much enterprise. To give the Canadian Agriculturists an opportunity of presenting the public with some of the riches of their intellect, the Committee offer a Gold Medal, with suitable inscription for the best Essay upon Agriculture and its advantages as a pursuit, the response to which they confidently trust will be such as to do credit to Agrculturists as a body.

In conclusion the Committee beg to say that they will be most happy to receive suggestions from all parties who may feel an interest in the Exhibition.

On behalf of the Committee,

GEORGE S. McCLEAN,
Secretary.

Brockville, C. W., Feb. 21, 1851.

AGRICULTURAL PRIZE ESSAY.

A Gold Medal of the value of £10, will be given by the Directors of the Johnstown District Agricultural Society, for the best Essay upon Agriculture and its advantages as a pursuit, to be read before the Agricultural Association, at the Provincial Exhibition, to be held at Brockville in September next. The Essay to be writen by a Canadian Agriculturist whose pursuits are wholly Agricultural, to be sent in to the Directors of the Society, before the 15th day of July next, under seal, with the name of the writer in a sealed note. The Directors reserve the right of deciding whether the Essay is worthy a premium or not. The Essay to be the property of the Society, and to be in such condensed form as to permit its delivery within the space of forty minutes.

GEORGE. S. McCLEAN,
Secretary.

Brockville, 15th February, 1851.

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* The rule of the Association, hitherto, has been to have a seperate class for foreign productions, and we are not aware that any deviation from such regulation is contemplated by the Directors.—[EDITOR.

EXTRACTS FROM HON. F. S. MARTIN'S ADDRESS BEFORE CATTARAUGUS AGRICULTURAL SOCIETY, N. Y.

"There is one marked feature of our national character, which is often displayed in our county, I allude to the great desire of change. The often futile hope of bettering their condition by some lucky turn in the wheel of fortune, has induced many a farmer who was doing well, to abandon all, and seek a new home upon the rich prairies of the west. A large proportion of this class would be very glad if they could return to their old localities, and exchange the ague and chill—fevers imbibed in their land of promise, for the bracing air and pure water of Cattaraugus.

"The amount of capital invested in agricultural pursuits, is always safer than in mercantile operations; commercial revolutions, the hazards of floods and of fires, often destroy the earnings of a life spent in the latter pursuit. The success of a very few of this class of men, is not a proper criterion by which we are enabled to form a correct judgment. They are only the exceptions to the general rule. Of the numbers who have commenced in mercantile business, it has been estimated that ninety-five in every hundred have failed.

"In conclusion allow me to impress upon every young man, that the pursuits of the farmer are not incompatible with the character of a gentleman. He is in a position which enables him to feel a degree of independance which few, if any, professional or commercial men can arrive at, and an education is as important to him as to the professional man, and no substantial reason can be given why it is not. It may not be important for you to be able to conjugate the verbs, and trace out the roots of the dead languages, but it is important for you to know the chemical analysis of the different soils which are daily under your feet, and ascertain their adaptation to the various kinds of crops. Do all in your power to sustain your county society: its influence is humanizing and exalting. Instead of wishing things better, go to work and make them so. Instead of spending your time in vain regrets for some advantages in our neighboring counties, strive to equal and to excel them; and not five years will have passed until cold frosty Cattaraugus will take a rank among other counties of the State, to which her natural resources and wealth justly entitle her."

AN EXAMPLE TO YOUNG FARMERS.

The following interesting fact is related by John Delafield, Esq., in the annual report of the Seneca Agricultural Society, of which he was President. It affords another illustration of the old proverb, "Where there is *a will*, there will soon be found out *a way*."

The President then called the attention of the

society to the cases of minerals on their tables, which had attracted much attention during the day, and many inquiries. These minerals, said the President, are the fruits of study, bestowed by a young and hard working farmer upon his profession. He had watched the planting, sowing, growth and maturity of seeds: he had helped to manure and turn the earth, when an intelligent, inquiring mind led him to ask, what is soil? what are its elements? why are some naturally fertile, others naturally barren—and why the difference of manures used in farming? how does yard manure produce certain results, and plaster of Paris certain other results? To ascertain these facts, he picked up stones, examined them, and compared them with the soil; he sought information from books, which he considered as the store-house of ideas and facts gathered, and treasured up by wiser men: and thus he has arrived at truths, which must make his path, as a farmer, more easy and certain in results for the remainder of his life. If he is present, in this room, he can explain the nature of the minerals you have examined, and we may all gather useful knowledge from the investigations of our laboring fellow-farmer.

The young farmer's name is Mr. Alexander Kirkwood, who was a laborer by the month on Mr. D's farm. He came forward, and by request, explained the study he had pursued, in a manner that would have done honor to a scholar, who has made the sciences alone, his study and pursuit. We regret that we cannot find place for his valuable address. This is the right direction for the young men on our farms. When they shall generally, be thus instructed, the pursuit will be one of intellectual pleasure as well as a healthful and profitable adventure.

ON DEEP PLOUGHING, &c.

To the Editor of the Canadian Agriculturist.

Sir,—As there is so much difference of opinion upon almost every subject, in these days of theory and much learning, permit me to address you with the few following lines upon farming, or cultivating what are here called clay lands, or the loamy lands of this part of Canada; as I know of no business more honorable than agriculture, although free traders will not allow its occupants either *sugar to their tea or plums to make a Christmas pudding with*, or indeed any other luxury; they are so anti-christian and selfish.

Theory says, plough your land very deep; the sound practice of by-gone days, for ages past, did not say so; indeed I have seen the most luxurious crops of grain and clover grown in England, from 1790 to 1834, without it. But after many years experience in agriculture and horticulture, I beg leave to give you the experiments of last summer. I took some clay from a furrow ploughed up about 8 inches deep at a cost of about $2\frac{3}{4}$ per acre, instead of $1\frac{1}{4}$ for ordinary depth. I put it into garden pots $4\frac{1}{2}$ inches deep by $4\frac{1}{2}$ inches wide, the plants, oats planted 26th June, grew weakly, and produced from 6 to 9 kernals each, at the same time I took some common earth the 3rd and 4th inches (rejecting the first 2 inches of sod) and in the same size pots, side by side, placed on a board to keep the roots from touching any other ground, these plants were fair and healthy, and produced 24 kernals on each of good grain and fine straw, I also tried some in moderate cucumber mould, 1 part dung, 2 parts common earth, and 1 part sand, as drainage; these were still finer with 29 kernels each; but, Mr. Editor, I have not seen a field of cucumber mould to sow oats upon in Canada, at present. Thus it seems that ploughing deep is not necessary, as it is double the expense, creates great labour for man, team and ploughs, &c., even down to the water-furrowing and hoeing, &c.; in a wet season in England, I should have required an extra horse for every team in harvest-time to haul the grain off the land; these lands with moderate ploughing, say $4\frac{1}{2}$ to 5 inches deep (uniform) kept clean of weeds, and dunged every fourth year for peas and clover, would seem to produce fair crops at moderate expense on an average of years. I saw a piece of land (new) ploughed deep last spring produce near 14 bush. of oats per acre, and land at no great distance produce over 40 bushels per acre. When the lands are laid up too high by deep ploughing with but few moulds, the great heat of this country dries them up and spoils the crop; but where the lands are ploughed up only a moderate depth in autumn and sown and scarified in the spring to make moulds and destroy weeds, or, drilled, which is much better, I have always seen good crops; indeed out of 3,000 acres, I had not one that failed.

Professor Johnston seems to have misled many by saying that clay has produced great crops of wheat *without any vegetable matter*, but he should have stated what were the *great powers of vegetation contained therein*. Professor Way says that 3 tons of clay require 2 tons of sand to pulverise it, and make it porous, and he might have added 1 ton of good rotten dung and 2 bushels of lime, as these would not have hurt it. But, I think with the present *low free-trade price of grain*, it would be well for the farmers of this country to pursue the plain system of farming adopted in England, from 1795 to 1830, as the surest and cheapest way of cultivating the clay lands of this country. That is to say, a fallow twice ploughed, 3 or 4 times scarified with a good set such as I have by me, which will do 6 or 7 acres per day at a cost of 2 or 3s. per acre York Cur'y, with one or two harrowings; to be sown with oats the next spring, (this straw and crop being the best,) followed by half clover and half peas, these to be manured for fall wheat, to be sown after the peas, and spring wheat after the clover, but not ploughed deep after peas or clover, or at any other time, as I have seen the wheat crop lost by so doing; and I could alway grow more grain with 3 or 4 inches of moulds, with a little manure and clear of weeds, than I could by any other means. Fallow or rest the land after the wheat, that being the great ex-

hausting crop, except great means of high and powerful vegetative manures are at hand. This system I have always found to facilitate the labour of the farm at a cheap rate, and the lands and crops would always bear inspection by men of business.

The powers of vegetation seem often to have escaped the observation of men of science, (so called,) which have long and much surprised me. You know, Mr. Editor, that amateur horticultural men base all their hopes of a crop upon this theme, being obliged to confine themselves to a small pot of mould for the growth of rich and splendid fruits, (without ploughing up dead clay,) to say nothing of the forbidden fruit, oranges, lemons, citrons, passion-fruit, &c. I have grown queen pine-apples, weighing 2 lbs. in a pot of earth 9 inches wide by 8 inches deep, and have seen numbers of them weigh 3 and 4 lbs. grown in pots 10 inches wide by 10 inches deep; and the mealy Providence pine-apple, grown in about a cubic foot of earth, weigh from 10 lbs. to 11¾ lbs., but no dead clay in these moulds. I assure you Mr. Editor, that a near neighbour of mine here grew the finest crops of melons in the open air, finer than I ever saw in any part of England, by laying four or five layers of 2 inch thick common sod (called maiden-earth by gardeners) upon each other, bottom upwards, but no clay. Herewith I enclose some club-wheat straw, grown on land ploughed 8 inches deep, probably it would have been much better if the ground had not been ploughed at all. I have seen a field whose crop of wheat was lost by it, not far distant; that is, a good clover ley well dunged and ploughed deep, sown with spring wheat, that produced only one bushel of poor wheat per acre. Wheat is sown too often here.

I think that a fallow every fourth year, to renovate the land and clear it from weeds and grass, should be done as effective and as cheap as possible, as the expense is to be spread, as it were, over the three succeeding crops, and the wide scarifier kills grass and weeds better than the plough and produces more moulds. My scarifier—simple in its construction, all the irons wrought, and by separating the blocks, or changing them, it marks out lands for corn, potatoes, peas, &c., and will hoe these crops, about six acres per day, much cheaper and better than any other plan that I could adopt. But I have also a simple double plough, which goes with a wide share to cut up the weeds, and then a narrower share and mould-boards, to finish and earth up with the second or last time; and it strikes up or cleans out the common furrows also. The rhomboidal harrows seem best for this country also.

And now Mr. Editor, if these few lines, or any part of them, should be of any use to your agricultural friends or readers, in these hard times of free trade delusion, I shall have much pleasure in presenting them, and beg to subscribe myself,

Yours, very sincerely,

ROBT. F. COOKE.

Cayuga, Feb'y 28th, 1851.

[Our Correspondent's experiments with oats and flower-pots, seem to us but very remotely connected with the question of deep ploughing. A soil taken within two or three inches of the surface, especially when that surface consists of sod, will unquestionably possess more organic matter, or in other words, more of the materials for building up the structure of plants, than soil taken at a greater depth. Experience has decided that deep cultivation upon poor wet clays requires to be accompanied by under draining; or more harm will be done than good. Upon a farm where shallow ploughing has been pursued and which has become exhausted by frequent cropping, we would recommend deeper cultivation by *degrees*; say, ploughing an inch or two deeper every crop for five or six years. To effect this, the sub-soil plough must be brought into requisition during the close of the term. The advantages of a deep seed bed are, a larger amount of active soil in which the roots of plants find nourishment, the absorption of a larger amount of air and moisture, and consequently a much smaller risk of suffering from the effects of drought; which in a climate like ours is an object of much importance. Deep cultivation, however, without manuring and a judicious rotation of crops, will not be found in the long run successful. The specimens of straw sent us were certainly miserable enough. Some startling facts connected with deep and thorough cultivation, will be found in a separate article, in our present number. The additional cost, and the price of produce, must of course, as our correspondent observes, be regarded by practical farmers, in the solution of all questions of this nature.]—EDITOR.

STRENGTH OF VITRIFIED CLAY PIPES.—Those of three-inch bore, lately tried at the works at Glasgow, stood the pressure of a column of water 230 feet high, and those of four-inch, 140 feet, without breaking. These pipes are said to be much cheaper than lead.

THE OBJECT OF MIXING CHARCOAL DUST WITH FRESH URINE.—Ammonia is the product of the putrefaction, which soon takes place in the urine; and the propriety of adding charcoal dust to the fresh liquid depends on the advantage of retaining the volatile products of that decay from its earliest stages.

THE PHYSIOLOGY OF DIGESTION.

The following remarks from the *Montreal Transcript*, may be advantageously read, as a supplement to the article on winter management and feeding of stock, which appeared in our February number. We are obliged to our contemporary for the correction of an inacuracy, which had escaped our observation. We employed the word *stomach* in too loose a sense; the lungs are the appropriate organs for renovating the blood, by exposing it to the action of the Oxygen of the air, by means of respiration; a simple and beautiful contrivance that is intimately concerned in the sustentation of animal heat.

We extract the following valuable article from the *Canadian Agriculturalist*, (Toronto) for February. Farmers ought to know, though they do not generally, that the expenditure of fat, by an animal in developing heat from the lungs and skin, is precisely that which would keep the place at the same temperature if converted into candles. The enormous consumption of train oil, by Laplanders and Esquimaux, and the consumption of oil or lard of any kind near the tropics; the appetite for fat meat acquired by exposure to sharp air and wind, which rapidly carries of the heat from the body, and the inability to eat anything but the fibrous and gelatinous parts of the meat by persons confined to warm rooms; the consumption of fat in winter by bears and other hybernating animals;—from these causes, the fact was suspected, but it was reserved for Liebeg to demonstrate it by chemical analysis. Perhaps we rather over stated the case, for if the fat is burned in the animals body, none of the heat is wasted, while if it were burned outside of it, some of it would be wasted. But the principle is, that if all the heat could be economised, to produce it would require the same amount of fat to be "burned," as chemists literally style it, whether the heat be developed by flaming, as in a candle, or by the action of the capillaries of the lungs on the blood, which carries it to that important organ from the absorbents of the bowels, or if those fail in supply, from the stores in the body; that is, either prevent the animal getting fat, or if food fail, make it leaner by converting the fat into heat.

Nor are the remarks as to ventilation less important. It is almost as pernicious to cattle as to human beings, to keep them warm by limiting the supply of pure air. The want of ventilation produces in cattle, complaints closely analogous to typhus and consumption in man. A collection of highly animalised vapours is poison to the nerves. The stomach then does its work imperfectly, and food passes through indifferently digested. The contents even of a root house, will perish if there is not means of escape for the gases.

The difficulty is to combine ventilation with heat, and to keep the temperature equable, and that is not very easy in a climate where the fluctuation is so great as this, and an animal cannot so easily change his coat as its owner can his. We are informed by the President of the Montreal Agricultural Society, whose success in raising the finest sheep is well known, that he adopts the plan of leaving it to the discretion of the animals. He finds them a warm covered pen, not however artificially warmed, for sheep have a very warm covering of their own, and leaves them free to take the fresh air when they please, by going into an inclosure well littered, which protects their feet.

The best animals require the most care in this respect, just as a thorough-bred racer, to be kept in condition, requires more grooming than a Shetland or Canadian poney; not that they or any other animals, particularly cows and pigs, are worse of good grooming. We remember about twenty, or five and twenty years ago, when the Teedsdale breed of cattle found their way from the plains of Durham, into the more moist and mountainous county of Cumberland, the hill farmers admitted that the short-horns were much better animals when fattened, and gave more return for their meat; but they said, what was true, that the long-horn was a much hardier animal, was less subject to disease, and starved over a late spring better than the other. They soon however, began to see this was no argument for keeping an inferior breed of cattle, but one for better farming. Accordingly they improved their farm buildings and their cultivation, and now an original unimproved long-horn is rarely seen, except on lands too cold and barren for any thing better.

There is in Canada a curious instance of the general application of the principles of vital chemistry. The lumberers, it is well known, are fed upon fat pork, pork so fat that it cannot be found in any quantity in this country, but is imported from the United States. That is not altogether a matter of taste, it is one of economy, pecuniary and physiological. They want the oil of the fat to enable them to resist the cold, and would consume an enormous quantity of lean pork, of which the fibrin and gelatine in the muscle and membrane, does not supply the materials of combustion so largely. They commence by total abstinence, and in about a fortnight the smell of spirituous liquors become positively odious and disgusting to them. As the season advances they commence eating the fat pork raw, and prefer it in that state, and will not relish it cooked. So we have been assured by a gentleman of unquestionable veracity.

The reason is plain. Alcohol, whatever be its merits or demerits in other respects, is a great supporter of combustion. The cooking of the pork would diminish the element they principally want, the oil or lard. And besides, it would do another thing; it would have the same effect as boiling down meat into soup or *bouilli*, it would make it too absorbable, enter into, and leave the system too rapidly. So that on precisely the same principles on which a man who has a

weak stomach, cooks his meat carefully and skims off the fat, a man with an active stomach, which is compelled to find fuel to the furnace of the lungs to keep him warm, eats his meat raw to give it work, and to save all the fat. These principles apply equally to the feeding of cattle as to man.

GOLDEN STRAWED WHEAT.

Published by authority of the Board of Agriculture Halifax, N. S.

We have much pleasure in publishing the following authenticated statement of the productive and safe qualities of the "Golden Strawed" Wheat: This variety of early wheat was imported from the United States, and sowed in Windsor, by Mr. James O'Brien, shortly after the first attacks of the wheat fly. It did not arrive in Windsor till late in the season, consequently no correct opinion could be formed of its properties, though its luxurious growth attracted the general attention; it matured sufficieutly for the purpose of seed, and the following year several farmers who had formed a correct opinion of its early and productive qualities, procured samples, and sowed them about the 10th June,—thereby escaping the season of the fly's existence. The straw being of a compact texture, and covered with a glazed cuticle is impervious to moisture, consequently resists 'rust,' to which late sowings of soft strawed wheats are so liable. It is more productive than the black sea wheat and rather earlier. The following returns obtained from the golden strawed wheat, give evidence of the productivness this season. In one stance, it yielded 22 bushels after 1 bushel own; another instance gave 17 to 1; and a hird, gave 14 to 1; all the excellent quality weighing in some instances 64 lbs. per pushel. Our informant who is a judicious farmer, says: "In cultivating the golden strawed wheat, we have nothing to fear from the fly if we sow during the first week in June; the crop only requires three months propitions weather to mature it." And he adds; "had we adopted this variety, and understood the theory of late sowing in time, we would long ago have starved out the fly, in place of being starved out by it."

This subject ought to engage the attention of our local Societies, and if they manifest a disposition to introduce this valuable variety of wheat more generally, we shall lend our assitance in procuring seed.

J. IRONS, Sec'y B. B. A.

Halifax, Jan., 1851.

Pigs Affected by Cold.—Fine-bred pigs, having little hair, must have a much warmer temperature than sheep. When pigs huddle together, it is a sure sign that they are not warm enough. Cold, stopping the circulation in the skin, drives the blood to the internal organs, and causes inflammation.—*Amer. Agr'l.*

MANAGEMENT OF SHEEP.

The following observations from a correspondent of the *Rural New Yorker*, who has had much experience in sheep husbandry, will be found useful to many of our readers.

I do not consider Indian corn a desirable grain for feeding ewes with reference to producing a supply of milk. It is a strong and heating grain, and will produce founder, will induce a fever, sooner than any other grain, if fed out liberally. It has no tendency to increase lacteal secretions, but its influence would be to dry them up. For the purpose of keeping store sheep in heart, and of recruiting a flock in low flesh, no grain is so good as corn if prudently fed, that is, regularly, and in very small quantities to each sheep. I greatly approve of grinding the corn and cob together. There is some value in the cob, and the use of corn in this way, is much safer than when not thus ground.

What would be the effect of intermixing the meal with carrots, I cannot, from any experience, suggest. If the meal and the carrot should be combined, the meal in small quantities with the view of keeping the sheep in condition, and the carrot in larger proportion to produce a flow of milk, I think it might do well. I have cultivated mangel wurtzel and carrots for large stock, but not for sheep.

I consider the carrot a more valuable root than the mangel wurtzel, and should esteem it preferable to the beet, in producing a flow of milk. But I think the same ground and same tillage will produce a larger product of the beet, than of the carrot. In my own experience, the beet has attained the largest size. Which would be the most profitable crop to feed to ewes, all things considered, it might be difficult to decide. If the circumstances of the soil and culture were such, as to ensure a great yield, I should prefer risking the carrot, for I consider it the richest and most nutricious root.

No grain I have ever fed to breeding ewes, has been so available in producing a flow of milk, as good shorts from wheat. They induce no febrile action, are nutritious, and seem to exert a specific influence in producing milk. One bushel to a flock of 30 ewes, fed twice a-day, say morning and evening, would be about two quarts each per day. Shorts of good quality should weigh 15 or 16 lbs. to the bushel. This affords about 1 lb. to each ewe per day, and I have found it sufficient, and to produce satisfactory results. But it may be objected, that this practice would involve an outlay of cash, to pay the miller's bill; and that the farmer should contrive to sustain his flock within his own resources.—This is true. In planning a disbursement the farmer should at the same time devise the means to meet the disbursement. And how shall it be done? In my own case, I have raised annually a crop of barley, for the special purpose of sustaining my flock in the winter, with a small saving under the circum-

stances and necessities. One acre of barley on good soil, well tilled, produced 80 bushels. (I have had it largely exceed this amount.) This at 60 cents per bushel, (and I have often obtained 75,) produced $18. This sum purchased 300 bushels of shorts at 6¼ cents per bushel, weighing 15 to 16 lbs. per bushel. From the first of December to the last of April is 150 days, and at two bushels per day just consumed the 300 bushels. Of course, one acre of barley furnished an ample supply of grain for 30 ewes for five months; and three acres would suffice for 100 ewes. As to the amount of labor, any farmer knows what it is. Barley requires a wheat soil—not low wet land. Ploughed late in the fall, and sowed in the spring soon as sufficiently dry to drag well, and the labor is done; and has interfered with no other work. The straw, is the most valuable straw produced. It is sweet and nutritious, and cattle eat it almost as greedily as they do hay.

Should a small number of ewes, as is sometimes the case, happen to yean in the winter, and give little or no milk through want of green food, the evil can be remedied entirely, by converting one mess of the shorts daily, into a warm mash. This will cost but little labor, when the farmer has a cauldron kettle set for farm use. The mash should be just so thin as to pour easily, and constitute a drink. Being as warm as it is safe for them to drink, all the evils of filling them with cold water will be remedied. If the troughs are filled with the mash while the sheep are shut up, and all are let out to them at once, no one can overreach and defraud his neighbor. It will astonish one to see with what eagerness they will consume it.

I have made these suggestions, in answer to the inquiry, "What is the best feed for breeding ewes, in reference to producing milk;" not in the least degree intending to disparage the root culture.

E. D.

To Make Butter in Winter.—In many parts of our country, the art of making good butter in the winter is very imperfectly understood. Indeed many good dairy women suppose it is absolutely impracticable to make it at that season. Now, in some places, at least in New England, it is constantly practised, and the process is as familiar as that of making butter in May or October. The short history of it is this:—The cows should be stabled and fed on good sweet hay, and if other provinder is added, so much the better. Instead of keeping the milk in a warm place, it should be kept in a cold one, no matter how soon it freezes. Freezing will separate the cream much more perfectly that it will rise without, and it is taken off with much less trouble.—When the cream is churned, the churn should not be placed too near the fire. The ordinary warmth of the kitchen will be sufficient. Too much heat will destroy both the complexion and flavour of the butter. It will require a little more time in churning than it does in warmer weather; and that is all the difficulty in making as good butter in January, as can be made at any season of the year. Butter cured with one half ounce of common salt, one-fourth ounce of saltpetre, one-fourth ounce of moist sugar, pounded together and used in the proportion of one ounce to the pound of butter, will, on trial, be fodnd to keep any length of time, and have a much finer flavour than when salted in the usual manner.

TWO CROPS AT ONCE—HIGHLY IMPORTANT TO FARMERS.

While nature has done so much to favour the cultivation of flax seed, and while the demand for it is unlimited in all our markets at fair prices, it is surprising to me that you have not turned your attention to its production. In Ohio the farmer depends upon it for a large portion of his yearly receipts. The reason, I think, must be *because the thing has not been introduced,* nor any pains taken by any body to bring it before the farmers, and this is sufficient reason for this article from the writer, who has been a practical western farmer.

Oats and flax I have grown together, and had full crop of each. In raising flax seed no attention should be paid to the fibre, the farmer should start out with this distinct principle, that to make the crop profitable, he must count the straw nothing, and look to the seed for profit. It is a very common notion with farmers that Flax is very exhausting upon land, and that more than one crop cannot be raised upon the same ground in five years; the correctness of this is unquestionable where the crop is raised for the fibre, but in raising it for the seed exclusively it is not correct. My course was this:—On a field I wish to stalk down I commence operations in the spring, say 1851, prepare the ground as early as possible, harrow well before sowing, it will take the seed more evenly, sow oats first, do not scrimp the seed, harrow well and then mix the flax and clover, or flax, clover, and timothy seeds together, not more than eight quarts of flax seed to the acre, and harrow or brush it well, and then apply the roller and the ground is well faced for mowing. The oats and flax will ripen together and can be cradled; they should be cut a little green to guard against shelling. The oats and flax can be thrashed with a machine, and separated with a fine screen or sieve at the time, the barn floor must be perfectly tight as it will sift like powder. The same ground will give good feed for cows in the fall; from the clover seed, in 1852 it will be a meadow; in 1853 mow early, take off the hay and keep every thing out and there will be a good crop of rowan or seed, plough it under about the 10th or 15th of September and sow wheat. The land is again stalked down and in good heart for the wheat crop. It should be well rolled to prepare it for the scythe.—One who has tried it.—*Correspondence of the Norfolk Messenger.*

RECIPE FOR MAKING BUCKWHEAT CAKES.

Do, dear Jane, mix up the cakes;
Just one quart of meal it takes;
Pour the water in the pot,
Be careful that its not too hot;
Sift the meal well through your hand;
Thicken well—don't let it stand;
Stir it quick—clash—clatter—
Oh! what light delicious batter.
Now listen to the next command:
On the dresser let it stand
Just three quarters of an hour,
To feel the gentle rising power
Of powders melted into yeast,
To lighten well this precious feast.
See, now it rises to the brim—
Quick—take the ladle, dip it in;
So let it rest until the fire
The griddle heats as you desire.
Be careful that the coals are glowing,
No smoke around its white curls throwing.
Apply the suet softly, lightly—
The griddle's face shines more brightly.
Now pour the batter on—delicious!
(Don't, dear Jane, think me officious,)
But lift the tender edges slightly—
Now turn it over quickly, sprightly.
'Tis done—now on the white plate lay it.
Smoking hot, with butter spread,
'Tis quite enough to turn our head.
Now I have eaten—thank the farmer
That grows this lucious mealy charmer—
Yes, thanks to all—the cook that makes
These light, delicious buckwheat cakes

—*Genesee Farmer.*

Interesting Physiological Fact.—It is remarkable, as among the millions of other proofs of the wisdom and provident care of the Supreme Being, that in the milk of a female, who has a fractured limb, the lime is reduced in quantity until the fractured bone is again united. The eggs, also, of a fowl, which has a broken limb, are without shells until the broken parts are again united.

Ancient Farming.—It is stated in an article on this subject, in the July number of the London Quarterly Review, that the average product of wheat in the home provinces of Rome, in the time of Varro, was 32 bushels to the acre, far more than the present average in Britain, and probably three times as much as that of the United States.

Agriculture in Switzerland.—Dr. J. V. C. Smith, the editor of the Boston Medical and Surgical Journal, has been travelling in that mountainous region of the world, and in one of his letters, notices some of the agricultural products of localities where the best efforts of the husbandman produce but a poor return in grain or potatoes. Hence the production of crops unknown to American farmers. One of these is poppies, which are grown by thousands of acres; not for opium, but the seed, from which a beautiful transparent oil is produced, which is much used in house painting, and is considered far superior to linseed oil, because it is almost colorless, and when used with white-lead, does not turn yellow like the oil of flaxseed, when exposed to the light. Poppies can be grown upon soil too sandy and light to produce flax. Why should not this new crop be sown in this country? Who will try it?—*American Agriculturist.*

Great Agricultural Movement in Growing Flax in England.—A company comprising many of the leading nobility and land-owners, is seeking from government a Royal Charter to give encouragement to agriculturists and farmers to bring into immediate cultivation, at least one hundred thousand acres of land, for the production of flax straw; which substance the promoters of the charter have, (by new and peculiar processes never hitherto adopted,) the power to convert into a fit state to hold competition with the best flax imported from foreign nations, without the aid of steeping, kiln-drying, nor mill scutching. The machinery by which the fibre is separated from the stalk, without steeping, is of a very simple and inexpensive kind, requiring no previous knowledge to work it. The unsteeped flax is uniform in strength, and free from stains, so that all after processes of manufacturing and bleaching may be conducted with a facility and exactness not hitherto attainable.—*Agri'l Gaz.*

Phosphate of Lime.—We have it in our power, at last, to record the discovery of an extensive deposit of phosphate of lime, at Crown Point, on the north shore of Lake Champlain. It is said that 92 per cent. only of the rock is phosphate, but even this amount will render it a valuable acquisition for the farmer's fields. In some of our previous volumes, we noticed the absence of any information on this subject in the extended report of the state geologists, and then predicted we should ere long find some deposits of this valuable manure which they failed to detect. We shall hope for the speedy discovery of still richer, and to us and the farmers of the Atlantic seaboard, more accessible accumulations of this long-stored treasures.—*Amer. Agricul'st.*

Ploughing in Egypt.—An American traveller writes from Egypt: "To-day I saw a buffalo and camel yoked together, ploughing near the river. I have seen two cows drawing by the horns in Belgium, an ass and a cow in Switzerland, but this team beats all others for ludicrous effect. A pole full twelve feet long is laid across their necks, they being all of nine feet apart; in the middle a rope is made fast, attached to the apology for a plough. Our friends at the agricultural warehouse in Quincy Market would be astonished, were they present, to see how a furrow can be turned up with such a strangely crooked stick, and about as well as it could be done with one of their beautiful, costly patent ploughs."

Horticulture.

GARDEN PEAS.

Prepare for an early crop as soon as the frost is out of the ground. Select a warm sheltered situation,—well manured. For later crops sow suitable varieties in succession.

The *Horticulturist* recommends the following,—*Prince Albert*, for the best *early* pea. It is a variety of the old "Early frame," but earlier and a better bearer.

Champion of England, a first rate marrow-fat pea, very large and of excellent flavor. It comes early and is a plentiful bearer.

Knight's Tall Marrow, a later variety, bearing a long time and very productive. It is more prolific than *Knight's Dwarf Marrow*, and is well suited to strong soils.

TO DESTROY THE WOOLY APHIS.

The *Cultivator* observes that this insect can be readily got rid of by the use of fish-oil. Put a little on the insects with a brush; it will kill those that it touches, and cause the others to leave the tree. Care should be taken not to use so much oil as to injure the tree.

THE APPLE.

(From the Montreal Witness.)

In the *Witness* for September, October and November, 1849, I gave ample directions for orchard planting, which, as they chiefly referred to apple orchards, and as the most of your readers must have seen them, I need not repeat here.

I did not then give any directions to enable those unacquainted with the best varieties of apples, to make a selection suitable to their locality, and I therefore, now intend to supply that want as far as I can, by giving select descriptive lists which I think will prove satisfactory to all who may give them a fair trial. Some of the varieties here recommended probably have not yet fruited in Eastern Canada. It therefore cannot be positively said whether they would be suitable to that climate or not—all however, would be adapted to Western Canada.

As with the Pear, it may be well to take the experience of the good folks of Maine, as a guide, so far as they have gone, in ascertaining what varieties not already proved in Eastern Canada, are likely to prove suitable to the climate. The fruit committe of Maine in their report before alluded to, gave the following list of apples that succeeded in the greatest perfection with them, viz: *Summer Apples.* Red Astrachan, Bough, Williams' Favourite and Golden sweet. *Autumn Apples*, Gravenstein, Portei, and Duchess of Oldenburgh. *Winter Apples*, Fameuse, Ribstone Pippin, Rhode Island Greening, Roxbury Russet, Baldwin, Danver's Winter Sweet, and Tallman, all of which are first rate apples. They do not appear to have tried our Pomme Grise, which, with the Baldwin, are in my opinion, the two best winter apples for any part of Canada.

The apple is not so much influenced by soil and climate as the pear, still some varieties are affected by these to a considerable extent, some doing best in a warm sandy soil, others in a rich heavy soil, while some prove equally good in almost any soil. On the other hand, some succeed well at the north, while others that are first rate there, are worth little further south, and others again are equally good at the north and sonth. The Ribstone Pippin, for instance is not worthy of cultivation here, at the extreme south of Canada, or in Ohio, or Southern New York, as, instead of being a fall and early winter apple, it ripens in September, turns quickly mealy and falls from the tree. East of Toronto, and in the more northern of the New England States, it is one of the very best, and sustains the high character that it has in England; again, the Newton Pippin, which is considered the best of all apples, taking all its qualities into consideration, appears only to attain its highest perfection in or near its native locality, Southern New York. It is very doubtful if it will do well in any part of Canada, unless in some very warm suitable soil, and in late warm autumns, as even here it seldom attains any degree of perfection, and could hardly be recognized as the same fruit so highly appreciated in the New York Markets; still it does not appear to be want of heat that prevents its attaining perfection, as throughout Ohio and the South Western States generally, it is quite inferior. If it does well in any part of Canada, I would be much obliged by those conversant with the fact, to inform me of the particulars, and also the kind of soil the trees are planted in.

Nearly all the best apples in this country have originated in the United States and Canada. There are however, a few European apples, that prove excellent in this climate, such as the Red Astrachan, Gravenstein, Ribstone Pippin, and a few others, which we could not do well without, but as a general thing, the finest apples for this climate have originated on this side of the Atlantic.

The following select list of twenty-four varieties, I can recommed as being amongst the very best; tastes however, differ so much, that some may prefer varieties not in this list to some that are in it, but as a whole, and taking the ave-

rage of tastes and other circumstances into consideration, it will I think, give satisfaction to all who may make their selections by it.

SUMMER APPLES.

Early Harvest.—Medium to large size: color, pale yellow; flesh tender, sub-acid, fine. Tree a moderate grower, but very productive; ripens latter part of July and early in August, and considered by many the best of its season; probably not so suitable for the north as the following. It needs rich cultivation.

Red Astrachan.—Large, nearly covered with a brilliant deep crimson, with a fine bloom like a plum, one of the most beautiful apples, ripens about the same time or a few days later than the Early Harvest; flesh rather crisp, acid. Tree vigorous, with large foilage, a good bearer, and a most desirable apple, either for desert or cooking.

Early Strawberry.—Size hardly medium, skin smooth, nearly covered with bright and dark red stripes; flesh tender, slightly tinged with red, with a mild pleasant flavour and agreeable perfume. Tree grows very erect, a good bearer, and proves good in nearly all localties; ripens during August.

Williams' Favorite.—Large, oblong, nearly covered with fine dark crimson; flesh rich and excellent, moderately juicy; a moderate grower and good bearer; suitable for the north, and proves excellent here; ripens during August.

Bough, or Large Yellow Bough.—Large, pale yellow, very tender, sweet and excellent; a moderate and regular bearer; ripening early in August.

American Summer Pearmain.—Medium to large, oblong, skin yellow, nearly covered with broken streaks and dots of red; flesh very tender, rich, sub-acid, and delicious; one of the best apples but not suitable for orchard culture as some, owing to the extreme tenderness of the flesh, it sometimes cracks open in wet weather, or when it falls to the ground. Tree a slow, but handsome erect grower, and a good bearer, ripens latter part of August and September.

SUMMER APPLES.

Gravenstein.—Rather large; color yellow, beautifully striped and dashed with light and deep red and orange; flesh tender, jucy, very rich with a fine sub-acid flavonr. Tree very vigorous and erect, and very productive; first rate in all localities; ripens in September and October.

Fall Pippin.—Very large, roundish oblong, yellow; flesh tender, rich, aromatic, and delicious. Tree large, vigorous, and spreading, a good bearer, and excellent in nearly all localities; generally esteemed; ripens October to December.

Porter.—Rather large, oblong, bright yellow, with sometimes a dull blush in the sun; flesh tender, rich sub-acid, of a fine, sprightly flavor. Tree moderate growth and productive, esteemed generally at the north; ripens in September.

St. Lawrence.—Large, surface broadly and very distinctly striped with dark red on a greenish yellow ground; flavor rather acid, very juicy, moderarely rich and agreeable; a very handsome and productive apple, ripening in September and October, keeps all winter.

Late Strawberry, or *Autumn Strawberry.*—Medium size, nearly the whole surface covered with broken streaks of light and dark red; flesh tender and juicy, with a very fine sub-acid flavor. Tree very vigorous and productive, one of the best early autumn apples; ripens in September and October, and sometimes keeps till winter.

Howley or *Dowse.*—Quite large, skin pale yellow, and slightly oily when kept; flesh fine grained and tender, with a fine mild, rich, sub-acid flavor; a most valuable apple. Tree grows moderately, and bears well: ripens in September and October: new.

WINTER APPLES.

Baldwin.—Large, nearly covered with bright red on a yellowish orange ground; flesh yellowish white, crisp juicy, with a very rich and high flavor. Trees grows very strong and upright, and is enormously productive every other year; fruit uniformly fair and handsome, and upon the whole, I consider it the very best apple for Canada. Ripens from December to March; here it is in perfection in the latter part of January and February.

Pomme Grise.—Small greyish russet; flesh tender, very rich, and high flavored; tree grows large and bears well; this fruit is well known in all parts of Canada, and succeeds admirably every where, and taking its hardiness, fine flavor, and good keeping qualities into consideration, it is unsurpassed as a winter dessert apple; in eating, from November till April.

Fameuse or *Snow Apple.*—Medium size, nearly covered with deep red, interspersed with darker red stripes; flesh very white, tender, juicy and delicious; tree a vigorous grower, and one of the most uniformly productive; succeeds in all parts of Canada; ripens in November, and in use till January.

Northern Spy.—Large, handsomely striped, and quite covered on the sunny side with dark crimson, with a slight bloom; flesh juicy, rich and aromatic; keeps through winter and late into spring, and even summer; often retaining its freshness of flavor and appearance till June and July; tree remarkably thrifty and erect in its growth, leafing out later in spring than any other variety, with the exception of the *Court Pendu.* In poor soils the tree must be highly cultivated.

Rhode Island Greening.—Large, green, bearing greenish yellow, with a dull brown blush in the sun; always fair, skin smooth oily; flesh yellow, fine grained, tender juicy, with a rich rather acid flavor, and excellent either for desert or cooking; trees grows very strongly, rather crooked or oblique when young; very productive, and keeps through the winter into spring; succeeds well in

all parts of the country; ripe from November to March.

Esopus Spitzenburg.—Rather large, surface nearly covered with a deep rich red with grey dots; yellowish, streaked with red on the shade side; flesh yellow, firm crisp, rich and excellent, with a delicious spicy flavor; tree when young rather a feeble grower, but afterwards growing vigorously; shoots rather long and slender, not so fine in some soils or localities as in others, but generally esteemed as excellent.

Roxbury Russet or *Boston Russet.*—Size, medium to large; skin covered with a rather rough brownish russet on a greenish yellow ground, with sometimes a dull brown cheek; flesh greenish white, moderately juicy, with a rather rich sub-acid flavor, although not high flavored, nor to be compared in that respect to the Pomme Grise; its uniform productiveness and fairness, and its long keeping qualities, render this variety very profitable for orchard culture; ripens in January, and may be brought to market in June.

Red Canada.—Medium size, surface nearly wholly covered with red, interspersed with large whitish dots; flesh fine grained compact, with a rich sub-acid and excellent flavor; one of the best apples, and succeeds in nearly all localities; tree a rather slender grower, productive, and fruit always smooth and fair; ripe from November til May.

Swaar.—Large, yellow, sometimes slightly russeted, with numerous brown dots; flesh yellowish, fine grained, tender, with an exceedingly rich aromatic, slightly sub-acid flavor, and a spicy smell; esteemed by many as the finest winter desert apple, succeeds best on a deep rich sandy loam, and does not thrive on cold moist soils; requires good culture to bring it to perfection, when it is one of the very best apples; tree a moderate erect grower, and bears fair crops; is in season from November to April and May.

Hubbardston Nonsuch.—Large, color striped and splashed with pale and bright red, on a rich yellow ground; considerably russeted near the stalk, and resembling the *Ribston Pippin* a good deal; flesh yellowish, juicy and tender, very rich and sweet, with an agreeable mingling of acid; flavor excellent, considered by some superior to the *Baldwin* and equal to the *Swaar* in richness; a strong grower and good bearer; in season from November to January.

Melon or *Norton's Melon.*—Large medium; color pale yellow, with bright red stripes; flesh white, tender, juicy, nearly melting, with a fine spicy, slightly sub-acid flavor; growth of tree rather slow, but a good bearer; ripe from October to March, and retains its freshness late in the spring.

Ladies' Sweet.—Large, smooth, nearly covered with red in the sun, pale yellowish green in the shade, with broken stripes of pale red; the red is sprinkled with greenish dots, and with a thin white bloom; flesh greenish white, exceedingly tender and rich, juicy and crisp, with a delicious sprightly agreeably perfumed flavor; the tree does not grow very strong, but it is thrifty and bears abundantly; ripens in November, and keeps without shrivelling or loosing flavor till May.

The time of ripening given in the forgoing list, is the time they would ripen in average seasons west of Lake Ontario. East of that they will be later ripening, and of course will keep in season longer. As the summer however, is as warm in Eastern Canada as here, it will be found that summer apples will ripen pretty much at the same time all over Canada. Some fruits that would be only autumn here, will be late autumn and early winter at Montreal.

JAMES DOUGALL.

Amherstburgh, C, W., March, 1851.

Scientific.

THE FAVORITE POISON OF AMERICA.

(Concluded from our February Number.)

And what, then, is the mystery of fine physical health, which is so much better understood in the old world than the new?

The first transatlantic secret of health, is a much longer time passed daily in the open air by all classes of people; the second, the better modes of heating and ventilating the rooms in which they live.

Regular daily exercise in the open air, both as a duty and a pleasure, is something looked upon in a very different light on the two different sides of the Atlantic. On this side of the water, if a person—say a professional man, or a merchant—is seen regularly devoting a certain portion of the day to exercise, and the preservation of his bodily powers, he is looked upon as a valetudinarian,—an invalid, who is *obliged* to take care of himself, poor soul! and his friends daily meet him with sympathising looks, hoping he "feels better," &c. As for ladies, unless there is some *object* in taking a walk they look upon it as the most stupid and unmeaning thing in the world.

On the other side of the water, a person who should neglect the pleasure of breathing the free air for a couple of hours daily, or should shun the duty of exercise, is suspected of slight lunancy; and ladies who should prefer continually to devote their leisure to the solace of luxurious cushions, rather than an exhilarating ride or walk, are thought a little *tete montee*. What, in short, is looked upon as a virtue there, is only regarded as a matter of fancy here. Hence, an American generally shivers in air that is only grateful and bracing to an Englishman, and looks blue, in

Paris, in weather when the Parisians sit with the casement windows of their saloons wide open. Yet it is, undoubtedly, all a matter of habit; and we Yankees, (we mean those not forced to "rough it,") with the toughest natural constitutions in the world, nurse ourselves, as a people, into the least robust and most susceptible *physiques* in existence.

So much for the habit of exercise in the open air. Now let us look at our mode of warming and ventilating our dwellings; for it is here that the national poison is engendered, and here that the ghostly expression is begotten.

However healthy a person may be, he can neither *look* healthy, nor remain in sound health long, if he is in the habit of breathing impure air. As sound health depends upon *pure blood*, and there can be no pure blood in one's veins if it is not re-purified continually by the action of fresh air upon it, through the agency of the lungs (the whole purpose of breathing, being to purify and vitalize the blood,) it follows, that if a nation of people *will*, from choice, live in badly ventilated rooms, full of impure air, they must become pale and sallow in complexions. It may not largely affect the health of the *men*, who are more or less called into the open air by their avocations, but the health of women, (*ergo* the constitutions of children,) and all those who are confined to rooms or offices heated in this way, must gradually give way under the influence of the poison. Hence, the delicacy of thousands and tens of thousands of the sex in America.

"And how can you satisfy me," asks some blind lover of stoves, "that the air of a room heated by a close stove is deleterious?" Very easily indeed, if you will listen to a few words of reason.

It is well established that a healthy man must have about a pint of air at a breath; that he breathes above a thousand times in an hour; and that as a matter beyond dispute, he requires about *fifty-seven hogsheads* of air in twenty-four hours.

Besides this, it is equally well settled, that as common air consists of a mixture of two gasses, one healthy (oxygen,) and the other unhealthy (nitrogen,) the air we have once breathed, having, by passing through the lungs, been deprived of most of the healthful gas, is little less than unmixed poison (nitrogen.)

Now, a room, warmed by an open fire-place or grate, is necessarily more or less ventilated, by the very process of combustion going on; because, as a good deal of the air of the room goes up the chimney, besides the smoke and vapour of the fire, a corresponding amount of fresh air comes in at the windows and door crevices to supply its place. The room, in other words, is tolerably well supplied with fresh air for breathing.

But let us take the case of a room heated by a close stove. The chimney is stopped up to begin with. The room is shut up. The windows are made pretty tight to keep out the cold; and as there is very little air carried out of the room by the stove pipe, (the stove is perhaps on the air-tight principle,—that is, it requires the minimum amount of air,) there is little fresh air coming in through the crevices to supply any vacuum. Suppose the room holds 300 hogsheads of air. If a single person reqnires 57 hogsheads of fresh air per day, it would last four persons but about twenty-four hours, and the stove would require half as much more. But, as a man renders noxious as much again air as he expires from his lungs, it actually happens that in four or five hours all the air in this room has been either breathed over, or it is so mixed with the impure air which has been breathed over, that it is all thoroughly poisoned, and unfit for *healthful* respiration. A person with his senses unblunted, has only to go into an ordinary unventilated room, heated by a stove, to perceive at once, by the effect on the lungs, how dead, stifled, and destitute of all elasticity the air is.

And this is the air which four-fifths of our countrymen and countrywomen breathe in their homes,—not from necessity but from choice.

This is the air which those who travel by hundreds of thousands in our railroad cars, closed up in winter, and heated with close stoves, breathe for hours—or often entire days.

This is the air which fills the cabins of closely packed steamboats, always heated by large stoves and only half ventilated; the air breathed by countless numbers—both waking or sleeping.

This is the air—no, this is even salubrious compared with the air—that is breathed by hundreds and thousands in almost all our crowded lecture-rooms, concert rooms, public halls, and private assemblies, all over the country. They are nearly all heated by stoves or furnaces, with very imperfect ventilation, or no ventilation at all.

Is it too much to call it the national poison, this continual atmosphere of close stoves, which, whether travelling or at home, we Americans are content to breathe, as if it were the air of Paradise.

We very well know that we have a great many readers who abominate stoves, and whose houses are warmed and ventilated in an excellent manner. But they constitute no appreciable fraction of the vast portion of our country-

men who love stoves—fill their houses with them—are ignorant of their evils, and think ventilation and fresh air physiological chimeras, which may be left to the speculations of doctors and learned men.

And so every other face that one meets in America, has a ghostly paleness about it, that would make a European stare.

What is to be done? "Americans will have stoves." They suit the country, especially the new country; they are cheap, labour-saving, clean. If the more enlightened and better informed throw them aside, the great bulk of the people will not. Stoves are, we are told, in short essentially democratic and national.

We answer, let us *ventilate our rooms*, and learn to live more in the open air. If our countrymen will take poison in, with every breath which they inhale in their houses and all their public gatherings, iet them *dilute it* largely, and they may escape from a part at least of the evils of taking it in such strong doses.

We have not space here to show in detail the best modes of ventilating now in use. But they may be found described in several works, especially devoted to the subject, published lately. In our volume on COUNTRY HOUSES, we have briefly shown, not only the principles of warming rooms, but the most simple and complete modes of ventilation,—from Arnott's chimney valve, which may for a small cost be placed in the chimney flue of any room, to Emerson's more complete aparatus, by which the largest apartments, or every room in the largest house, may be warmed and ventilated at the same time, in the most complete and satisfactory manner.

We assure our readers that we are the more in earnest upon this subject, because they are so apathetic. As they would shake a man about falling into that state of delightful numbness which precedes freezing to death, all the more vigorously in proportion to his own indifference and unconsciousness to his sad state, so we are the more emphatic in what we have said, because we see the national poison begins to work, and the nation is insensible.

Pale countrymen and countrywomen, rouse yourselves! Consider that GOD has given you an atmosphere of pure, salubrious, health-giving air, 45 miles high, and—*ventilate your houses.*

A CHAPTER ABOUT THE INDIA RUBBER TREE.

The following account of the mode in which the very useful and increasingly important article of commerce, named caoutchouc, is obtained, will, we doubt not, prove interesting to our readers. We are indebted for the statement to the Brazilian correspondent of an American paper:—

"The caoutchouc tree grows, in general, to the height of forty or fifty feet without branches, then branching, runs up fifteen feet higher. The leaf is about six inches long, thin, and shaped like that of a peach tree. The trees show their working by the number of knots, or bunches, made by tapping; and a singular fact is, that, like a cow, when most tapped, they give most milk or sap. As the time of operating is early day, before sunrise we were ready. The blacks are first sent through the forest, armed with a quantity of soft clay, and a small pick-axe. On coming to one of the trees, a portion of the soft clay is formed into a cup and stuck to the trunk. The black then striking his pick over the cup, the sap oozes out slowly, a tree giving daily about a gill. The tapper continues in this way, tapping perhaps fifty trees, when he returns, and with a jar passing over the same ground; empties his cups. So by seven o'clock the blacks come in with their jars ready for working. The sap at this stage resembles milk in appearance, and somewhat in taste. It is also frequently drank with perfect safety. If left standing now, it will curdle like milk, disengaging a watery substance like whey.

"Shoemakers now arrange themselves to form the gum. Seated in the shade, with a pan of milk on one side, and on the other a filagon, in which is burned a nut peculiar to this country, emitting a dense smoke, the operator having his last, or form, held by a long stick or handle, previously besmeared with soft clay, (in order to slip off the shoe when finished,) holds it over the pan, and pouring on the milk until it is covered, sets the coating in the smoke, then giving it a second coat, repeats the smoking, and so on with the third and fourth, until the shoe is of the required thickness, averaging from six to twelve coats. When finished, the shoes on the forms are placed in the sun the remainder of the day to drip. Next day if required they may be figured, being so soft that any impression will be indellibly received. The natives are very dexterous in this work. With a quill and a sharp pointed stick they will produce finely-lined leaves and flowers such as you may have seen on the shoes, in an incredible short space of time. After remaining on the forms two or three days, the shoes are cut open on the top, allowing the last to slip out. They are then tied together and slung on poles, ready for the market. There, pedlars and Jews trade for them with the country people; and in lots of thousands or more they are again sold to the merchants, who have them stuffed with straw and packed in boxes to export, in which state they are received in the United States. In the same manner, any shape may be manufactured. Thus toys are made over clay forms. After drying, the clay is broken and extracted. Bottles, etc., in the same way. According as the gum grows older, it becomes darker in color and more tough. The number of caoutchouc trees in the province is countless. In

some parts whole forests of the trees exist, and they are frequently cut down for firewood. Although the tree exists in Mexico and the East Indies, there appears to be no importation into the United States from these places. The reason I suppose must be the want of that prolificness found in them here. The caoutchouc tree may be worked all the year, but generally in the wet seasons they have rest, owing to the flooded state of the woods; and the milk being watery, requires more to manufacture the same article than in a dry season."—*Western Literary Magazine.*

FROGS IN STONES.

We have several apparently well authenticated instances on record of frogs and toads having been found enclosed in masses of rock, to the interior of which there is no perceptible means of ingress. It has been the fashion, however, with naturalists, to dismiss all such cases on the assumption that there must have been some cleft or opening by which the animal was admitted while in embryo, or while in a very young state; no one, as far as we are aware, believing that the sperm or young animal may have been enclosed when the rock was in the process of formation at the bottom of shallow waters. Whatever may be the true theory regarding animals so enclosed, their history is certainly one of the highest interest; and without attempting to solve the problem, we present our readers with an instance taken from the Mining Journal, of January 18th, 1845:—"A few days since, as a miner, named W. Ellis, was working in the Penydarran Mine Works, at forty-five feet depth, he struck his mandril into a piece of shale, and to the surprise of the workmen, a frog leaped out of the cleft. When first observed, it appeared very weak, and, though of large size, would crawl only with difficulty. On closer examination, several peculiarities were observed; its eyes were full-sized, though it could not see, and does not now see, as, upon touching the eye, it evinces no feeling. There is a line indicating where the mouth would have been, had it not been confined; but the mouth has never been opened. Several deformities were also observable; and the spine, which has been forced to develop itself in angular form, appears a sufficient proof of its having grown in very confined space, even if the hollow in the shale, by corresponding to the shape of the back, did not place the matter beyond a reasonable doubt. The frog continues to increase in size and weight, though no food can be given to it; and its vitality is preserved only by breathing through the thin skin covering the lower jaw. Mr. W. Ellis, with a view of giving his prize as much publicity as possible, has deposited it at the New Inn, Merthyr, where it is exhibited as "the greatest wonder in the world—a frog found in a stone forty-five feet from the surface of the earth, where it has been living without food for the last 5000 years!"—*Chambers' Journal.*

DESCENT IN A DIVING BELL.

The Bunker Hill Aurora, states that Capt. Taylor afforded a highly interesting exhibition, on board the Spitfire, while lying near the Navy Yard a short time ago. A number of gentlemen had been invited on board, and about fifty were present, including Commodore Nicholson, Collector Morton, Mr. Parmenter, Capt. Sturgis, Hon. Benjamin Thompson, and others. One of Capt. Taylor's men first went down in the submarine armor and explored the bottom for some time, being fully supplied with air from the air-pumps. After he was drawn up, Capt. Taylor taking a friend with him, went down in one of his new copper Diving Bells, which he had just been making for the government. They descended to the depth of about forty-five feet, and remained on the bottom about half an hour. While there they sent up a message, written on a piece of board, for a bottle of Porter, which came down, with a corkscrew and tumbler, and each gentleman "took a drink." At one time there was about a foot of water in the bell while Captain Taylor permitted the air to escape at the top of the bell so as to keep it fresh; by turning the stopcock, the air was condensed, and the water expelled to within an inch of the rim of the bell. The experiment was completely successful and highly satisfactory. A strong tide was running, but the bell was so constructed that it was but slightly affected by it. The bottom was thoroughly explored, for a circumference of twenty feet around the spot where the bell descended. Various kinds of fish were seen and could have been taken with a spear. The atmosphere inside the bell was warm, but the heat was not oppressive or disagreeable. In descending, the pressure of the air on the tympanums of the ears was rather painful; but this was obviated as soon as the system became adjusted to the pressure. While at the bottom the sensations were pleasant and rather exhilirating. The bell appears to us to be a most perfect apparatus, and to possess many advantages over all others which have heretofore been used.—*Literary Messenger.*

GREAT DISCOVERY IN ILLUMINATING AND MOTIVE POWER.—The *Railway Times* has the following:—"The decomposition of water has at length been obtained, and that at a merely nominal cost, and with unerring precision. This great discovery originating in America, has been perfected by the experiments of an eminent German chemist, and patented in the three kingdoms by Mr. Shepard. The carburretted hydrogen may be formed to any extent, which, while possessing an illuminating power, equal to that of coal gas, is capable of being itself applied to the same purposes as steam at a remarkably high pressure. The gas is also capable of producing an amount of caloric equal to that of live coal, and consequently well and cheaply fitted to act as a combustible agent in the conversion of water into steam. This tremendous power has been for some time engaging the attention of our most eminent engineers, and will, when sufficiently tested, be experimented upon before the public. If successful, as there is every appearance of its being, the revolution it must effect in the economic working of railways, and indeed in every branch of trade and manufacture where steam is employed as a motive power, is altogether incalculable. It almost opens to the wondering gaze the Utopian vista in which unskilled manual labor shall be no longer necessary. It is sufficient for us, however, to state that several leading railway companies are in treaty with the patentee; and that, consequently, if anything whatever is capable of being made out of the discovery, the railway interest will possess at once the first benefit and chief honor in its realization."

HEATING BY STEAM.—This is by no means a modern invention. In 1745, Col. William Cook improved upon a plan of heating hothouses, suggested by Sir Hugh Platt, many years before, and in 1755, we find him recommending it as applicable for the forcing of fruit.—*North-British Agriculturist.*

Important to Tanners of Leather.—Henry W. Ellsworth, Esq., says the Lafayette Journal, has shown us several specimens of leather, which were tanned under his own eyes, in the space of ten minutes, by a process of which Marion Hibbard, of Rochester, New York, is the inventor.—This statement may seem almost incredible, when it is considered that six, eight or ten months are required by the ordinary process.

Mr. Ellsworth has in his possession a pair of boots and a pair of shoes made from a raw hide tanned in less than a day and a half, by his new process. The leather is tanned by a compound of chemicals, and in time and materials is a saving of at least five hundred per cent. over the present slow method of making leather.

The right, says the Journal, for Connecticut and Massachusetts was sold for $500,000; Ohio for $150,000. This undoubtedly is one of the greatest improvements of the age.

Make Your own Candles.—Take twelve ounces of alum for every ten pounds of tallow, dissolve it in water before the tallow is put in, and then melt the tallow in the alum water with frequent stirring and it will clarify and harden the tallow, so as to make a most beautiful article, for either summer or winter use, almost as good as sperm.

If the wick be dipped in spirit of turpentine, the candles will reflect a much more brilliant light.—*American Farmer.*

Phenomena Attendant on Immersing the Hands in Molten Metal. — M. Corne, in a paper submitted to the Paris Academy of Sciences, says:

"Having determined on investigating the question whether the employment of liquid sulpherous acid for moistening the hands, would produce a sensation of coldness when they are immersed in the melted metal, I immersed my hands, previously moistened with sulpherous acid, in the molted lead, and experienced a sensation of decided cold. I repeated the experiment of immersing the hand in the melted lead and in fused cast iron. Before experimenting with the melted iron, I placed a stick previously moistened with water in the stream of liquid metal, and on withdrawing it, found it to be almost as wet as it was before; scarcely any of the moisture was evaporated. The moment a dry piece of wood was placed in contact with the molten metal, combustion took place. M. Covlet and I then dipped our hands in to vessels of the liquid metal, and passed our fingers several times backwards and forwards through a stream of metal flowing from the furnace; the heat from the radiation of the fused metal being at the same time almost unbearable.—We varied these experiments for upwards of two hours, and Madame Covlet, who assisted at these experiments, permitted her child, a girl of nine years of age, to dip her hand in a crucible of red hot metal with impunity. We experimented on the melted iron both with our hands quite dry and when moistened with water, alcohol and either. The same results were obtained as with molten lead, and each of us experienced a sensation of cold when employing sulpherous acid."

Literature, &c.

THE USEFUL AND THE BEAUTIFUL.

The tomb of Moses is unknown; but the traveller slakes his thirst at the well of Jacob. The gorgeous palace of the wisest and wealthiest of monarchs, with the cedar, and gold, and ivory; and even the great temple of Jerusalem, hallowed by the visible glory of the Deity himself—are gone; but Solomon's reservois are as perfect as ever. Of the ancient architecture of the Holy City not one stone is left upon another; but the pool of Bethesday commands the pilgrim's reverence at the present day. The columns of Persepolis are mouldering into dust; but its cisterns and aqueducts remain to challenge our admiration. The golden house of Nero is a mass of ruins; but the Aqua Claudia still pours into Rome its limpid stream. The temple of the sun at Tadmor, in the wilderness, has fallen; but its fountain sparkles as freshly in his rays, as when thousands of worshipers thronged its lofty colonnades. It may be that London will share the fate of Babylon, and nothing be left to mark its site save mounds of crumbling brick-work. The Thames will continue to flow as it does now. And if any work of art should still rise over the deep ocean of time, we may well believe that it will be neither a palace nor a temple, but some vast aqueduct or reservoir; and if any name should still flash through the mist of antiquity, it will probably be that of the man who in his day sought the happiness of his fellow men rather than their glory, and linked his memory to some great work of national utility and benevolence. This is the true glory which outlives all others, and shines with undying lusture from generation to generation—imparting to works something of its own immortality, and is some degree rescuing them from from the ruin which overtakes the ordinary monuments of historical tradition or mere magnificence.—*Edinburgh Review.*

FATAL SOOTHING SYRUPS.

Caution to Mothers. — Indisputable facts prove the extent to which this system is adopted. Walking about Manchester and Birmingham, advertisements of "Mothers' quietness," "Soothing Syrup," arrest the attention at every turn. It is easy to observe that the druggists are driving a good trade—that the quiet homes of the poor are reeking with narcotics. The report of the Board of Health furnishes some appalling facts on this head. In Preston, twenty-one druggist sold, within the space of one week, no less a quantity than sixty eight pounds of narcotics, nearly all of which were for the use of children; and the calculation of the quantity of Godfrey's cordial sold in Preston, gave a weekly allowance of half an ounce to each family! Generally, Godfrey's cordial is mixed in the proportion of one ounce and a half of pure laudanum to the quart, and the stronger it is the faster it is sold. It may be had at general dealers as well as at

druggists; and on market days the people from the surrounding neighborhoods regularly provide themselves with this "mothers' comfort," as they purchase other household provisions. About two thousand gallons of Godfrey's Cordial are sold in Manchester alone every year. Mr. F. C. Calvert, at a recent meeting at Manchester, stated that in one chemist's shop in Deansgate, two hundred and fifty gallons were sold in the course of a year; the same quantity in a shop; one hundred gallons in another; the same quantity in a shop in Hulme, and twenty-five gallons each in two shops in Chorlton-on-Medlock. These nurses to whom the children of the factory people are entrusted, are either laundresses or superannuated crones. The more they drug the children entrusted to them, the greater number they can undertake to manage. This consideration acts as a powerful incentive to drug. That wholesale death is the result, is fully proved. Among the gentry in Preston, for instance, the average number of deaths of children under five years old, was 17 per cent.; among tradesmen, about 38 per cent.; and among operatives 54 per cent. Of every one hundred children born among the gentry, ninety-one reach their first year; eighty among the trading classes, and sixty-eight among the operatives. The vital statistics of Preston for six years, shows that no less than three thousand and thirty-four children were swept away before they had attained their fifth year, who, had they been the offspring of wealthy parents, would have survived that period of their childhood."—*Dickens' Household Words.*

Our Fashionable Girls.

Mrs. Swisshelm, of the Pittsburgh Saturday Visitor gives the following matter-of-fact information in one of her admirable "letters to country girls:"

"There are hundreds of girls in every large city who parade the streets, in feathers, flowers, silks and laces, whose hands are soft and white as uselessness can make them, whose mothers keep boarders to get a living for their daughters. These mothers will cook, sweep, wait at table, carry loads of marketing, do the most menial drudgery toil late and early with very little more clothing than would be allowed to a southern slave, while their hopeful daughters spend their mornings lounging in bed, reading some silly book, taking lessons in music and French, fixing finery, and the like.

"The evenings are devoted to dressing, displaying their charms and accomplishments to the best advantage, for the wonderment and admiration of the knights of the yard-stick and young aspirants for professional honors—doctors without patients, lawyers without clients—who are as brainless and soulless as themselves. After a while the piano sounding simpleton captivates a tape-measuring, law-expounding, or pill making simpleton. The two ninnies spend every cent that can be raised by hook or crook—get all that can be got on credit in broadcloth, satin, flowers, lace, carriage, attendance, &c.—hang their empty pockets on somebody's chair, lay their empty heads on somebody's pillows, and commence their empty life with no other prospect than living at somebody's expense—with no higher purpose than living genteelly and spiting their neighbors. This is a synopsis of the lives of thousands of street and ball-room belles, perhaps of some whose shining costume you have envied from a passing glance.

"Thousands of women in cities dress elegantly on the streets, who have not had a sufficiency of wholesome food, a comfortable bed, or fire enough to warm their rooms. I once boarded in a "genteel boarding house" in Louisville. There were two young ladies and a piano in the house; halls and parlors handsomely furnished. The eldest young lady, the belle, wore a summer bonnet at ten dollars, a silk and blonde concern that could not last more than two or three months; silk and satin dresses at two, three or four dollars per yard, and ten dollars a piece for making them, and the entire family, women, boys and babbies, nine in all, slept in one room, with two dirty bags of pine shavings two straw bolsters, and three dirty quilts for bedding: no sheets, no slips, and there on the wall hung the pea green and white satin, the rich silk and lawn dresses.

"These ladies did not work, but played the piano, accordeon and cards; and nearly broke their hearts the week before we were there because another, who I presumed lived just as they did, called on them with a great, clumsy gold chain on her neck. None of them had one, and Miss Labalinda, the belle, could eat no supper, and had a bad fit of sulks to console her for want of a chain. But, dear me, I had no notion of running away off here. I was just thinking how busy you country girls are apt to be in the fall, and this led me to think what a blessing it is that you have something to do and that you think it a disgrace to live idly. It is a greater blessing to live in the country where it is a credit to work, for idleness is the parent of vice and misery. So do not get weary or think your lot a hard one when putting up pickles or preserves, apples, butter, sausages and sauces for future use.

Lake of Alligators in Scinde.

This curious place is about eight miles from Kurachee, and is well worth inspecting by all who are fond of the monstrous and grotesque. A moderate ride through a sandy and sterile tract, varied with a few patches of jungle, brings on to a grove of tamarind trees, hid in the bosom of which are the grisly brood of monsters. Little would one ignorant of the locale suspect that under that green wood in that tiny pool, which an active leaper could half spring across, such hideous denizens are concealed. "Here is the pool," I said to my guide rather contemptuously, "but where are the alligators? At the same time I was stalking on very boldly with head erect, and rather inclined to flout the whole affair, *nuso adonco.* A sudden hoarse roar or bark, however under my very feet, made me execute a piroutte in the air with extraordinary adroitness, and perhaps with more animation than grace. I had almost stepped on a young crocodilian imp, about three feet long, whose bite, small as he was, would have been the reverse of pleasant. Presently the genius of the place made his appearence in the shape of wizard looking old Fakeer who, on my presenting him with a couple of rupees, produced his wand—in other words, a long pole, and then proceeded to "call up his spirits." On his shouting "Ao! ao!" "Come! Come!" two or three times, the water suddenly became alive with monsters. At last three score huge aligators, some of them fifteen feet in length, made their appearance, and came thronging to the shore. The whole scene reminded me of fairy tales. The solitary wood, the pool

with its strange inmates, the Fakeer's lonely hut on the hill side, the Fakeer himself, tall, swart and gaunt, the robber-looking Belochee by my side, made up a fantastic picture. Strange, too, the control our showman displayed over his 'lions.' On motioning with the pole, they stopped (indeed they had arrived at a very disagreeable propinquity), and on his calling out "Baitho," "Sit down," they lay flat on their stomachs, grinning horrible obedience with their open and expectant jaws. Some large pieces of flesh were thrown to them, and to get which they struggled writhed, and fought, and tore the flesh into shreds and giblets. I was amused with the respect the smaller ones had to their overgrown seniors. One fellow, about ten feet long, was walking up to this feeding ground from the water, when he caught a glimpse of another much larger just behind him. It was odd to see the frightened look with which he sidled out of the way evidently expecting to lose half his tale before he could effect his retreat. At a short distance, perhaps half a mile, from the first pool I was shown another, in which the water was as warm as one could bear it for complete immersion, yet even here I saw some small alligators. The Fakeer told me these brutes were very numerous in the river, about fifteen or twenty miles to the west. The monarch of the place, an enormous alligator, to which the Fakeer has given the name of "Mor Shaeb," "Lord Mor," never obeyed the call to come out. As I walked around the pool I was shown where he lay, with his head above water immoveable as a log, and for which I should have mistaken him but for his small savage eyes, which glittered so that they seemed to emit sparks. He was the Fakeer said, very fierce and dangerous, and at least twenty feet in length.—*Dry leaves of Young Egypt.*

Scenery of Lake Superior—Isle Royale.—The scenery of Lake Superior is, in many respects, different from, and better than any other in our country. Our Geological Corps are the only persons who have fully surveyed it. From their account, there is much in the scenery and atmosphere of Lake Superior which should attract the attention of travellers in search of pleasure and novelty.

The following description of Isle Royale is from the pen of Dr. Jackson, late United States Geologist:

"Isle Royale is a most interesting Island, singularly formed, cut up into deep bays, and sending out long spits of rocks into the lake at its north-eastern extremity, while at its south-western end it shelves off far into the lake, presenting slightly inclined beds of red sandstone, the tabular sheets of which, for miles from the coast, are barely covered with water, and offer dangerous shoals and reefs, on which vessels and even boats would be quickly stranded if they endeavor to pass near that shore. How different is the coast on that portion of the Island where the rocks are of igneous origin. Bold cliffs of columnar trap and castellated rocks, with mural escarpments, sternly presenting themselves to the surf, and defy the storms. The waters of the lake are deep close to their very shores, and the largest ship might in many places lie close to the rocks as at an artificial pier. The color of the water affected by the hues of the sky, and holding no sediment to dim its transparency, presents deeper tints of blue, green and red prevailing, according to the color of the sky and clouds.

I have seen at sunset the surface of the lake off Isle Royale of a deep claret color—a tint much richer than ever is reflected from the waters of other lakes, or in any other country I have visited. Added to the fantastic irregularities of the coast and its castle-like Islands —the abrupt elevation of the hills inland rising like almost perpendicular walls from the shores of the numerous beautiful lakes which are scattered through the interior of the Island and corresponding with the finest of the mountain upheaved—we observe occasionally rude crags detatched from the main body of the mountains, and in one place two lofty twin towers, standing on a hill-side, and rising perpendicular, like huge chimneys, to the elevation of 70 feet, while they are surrounded by deep green foliage of the primeval forest. I requested my assistant (Mr. Foster,) to make a sketch of these singular towers while I was engaged in measuring heir height.

Not less strange and fantastic are the effects of *mirage* on the appearance of the peculiar scenery of this Island, and the coast of the lakes seen from it. For weeks in summer, the traveller may be gratified by a view of the most curious phantasmagora—images of the Island and mountains being most vividly represented, in all their outlines and their tufts of evergreen trees all inverted in the air and hanging over the terrestrial originals, and again repeated upright in another picture directly over the inverted reflection.

The Truly Great.—It is not improbable that the noblest human beings are to be found in the least favoured conditions of society, among those whose names are never uttered beyond the narrow circle in which they toil and suffer, who have but "two mites" to give away, who have perhaps not even that, but who "desires to be fed with the crumbs which fall from the rich man's table;" for in this class may be found those who have withstood the severest temptations, who have practiced the most arduous duties, who have confided in God under the heaviest trials, who have been most wronged and have forgiven most; and these are the great, the exalted. It matters nothing what the particular duties are to which the individual is called, how minute or obscure in their outward form. Greatness in God's sight, lies not in the extent of the sphere which is filled, or of the effect which is produced, but altogether in the power of virtue in the soul, in the energy with which God's will is chosen, which trial is borne, and goodness loved and pursued.—*Rev. Dr. Channing.*

Energy.—Energy is omnipotent. The clouds that surround the houseless boy of to-day are dispersed, and he is invited to a palace. It is a work of energy. The child who is a beggar one moment, in a few years to come, may stand forth the admiration of angels. Who has not seen the life-giving power of energy? It makes the wilderness to bloom like the rose; navigates our rivers; whitens the ocean; levels mountains; paves with iron a highway from State to State; and sends through, with the speed of lightning, intelligence from one extremity of the land to the other. Without energy what is man?

Temper.—Bad temper is oftener the result of unhappy circumstances than of an unhappy organization; it frequently, however, has a physical cause, and a peevish child often needs dieting more than correcting. Some children are more prone to show temper than others, and sometimes on account of qualities which are valuable in themselves. For instance, a child of active temperament, sensitive feeling and eager purpose is more likely to get into constant jars and rubs, than a dull passive child, and, if he is of an open nature, his inward irritation is immediately shown in bursts of passion. If you repress these ebullitions by scolding and punishment, you only increase the evil,

by changing passion into sulkiness. A cheerful good-tempered tone of your own, a sympathy with his trouble arising from no ill conduct on his part, are the best antidotes; but it would be better still to prevent beforehand, as much as possible, all sources of annoyance. Never fear spoiling children by making them too happy. Happiness is the atmosphere wherein all good affections grow, the wholesome warmth necessary to make the heart blood circulate healthily and freely; unhappiness the chilling pressure which produces here an inflamation, there an excrescence, and, worst of all, "the mind's green and yellow sickness—ill temper."—*Education of the feelings, by Charles Bray.*

Effects of Habit on the Infant Mind.—I trust every thing to habit—habit, upon which, in all ages, the lawgiver, as well as the school-master, has mainly placed his reliance; habit, which makes every thing easy, and casts all difficulties upon the deviation from the wonted course. Make sobriety a habit, and intemperance will be hateful and hard:—make prudence a habit, and reckless profligacy will be as contrary to the nature of the child grown an adult, as the most atrocious crimes are to any of your lordships.—Give a child the habit of sacredly regarding the truth, of carefully respecting the property of others, of scrupulonsly abstaining from all acts of improvidence which can involve him in distress, and he will just as likely think of rushing into an element in which he cannot breathe, as of lying, or cheating, or stealing.—*Lord Brougham.*

Noble Sentiment.—I envy no quality of mind or intellect in others—not genius, power, wit or fancy; but if I could choose what would be most delightful, and I believe most useful to me, I should prefer a firm religious belief to every other blessing, for it makes life a discipline of goodness, creates new hopes when all earthly hopes vanish, and throws over the decay, the destruction of existence, the most gorgeous of all lights; awkens life even in death, and from corruption and decay calls up beauty and divinity; makes an instrument of torture and of shame, the ladder of ascent to paradise; and far above all combinations of earthly hopes, calls up the most delightful visions, palms, and amaranths, the gardens of the blessed; the security of everlasting joys, where the sensualist and sceptic view only gloom, decay, and annihilation.—*Sir Humph ey Davy.*

The Affections.—There is a famous passage in the writings of Rosseau, that great delineator of the human heart, which is as true to human nature as it is beautiful in expression: "Were I in a desert I would find out, where within it to call forth my affections.—If I could do no better, I would fasten them on some sweet myrtle, or on some melancholy cypress to connect myself to; I would court them for their shade, would write my name upon and declare that they were the sweetest trees through all the desert. If their leaves withered, I would teach myself to mourn, and when they rejoiced I would rejoice along with them." Such is the absolute necessity which exists in the human heart of having something to love. Unless the affections have an object, life itself becomes joyless and insipid. The affections have this peculiarity, that they are not so much the means of happiness as their exercise is happiness itself. And not only so, if they have no object, the happiness derived from our other powers is cut off. Action and enterprise flag, if their be no object dear to the heart, to which those actions can be directed.

Editor's Notices, &c.

PROVINCIAL AGRICULTURAL ASSOCIATION.

We have much pleasure in directing the attention of our readers to the Address, which will be found in another page, of the Committee of the Johnstown District Agricultural Society. We trust, for the credit of the country, that its earnest and hopeful spirit, will be generously responded to by all classes of our Canadian community.—The prospect of the next Exhibition, to be held at Brockville, is so far quite cheering. The town and county will raise £500 towards the funds of the Show, and we are happy to learn that a zealous spirit to excel, is actuating the principal inhabitants of the locality. In addition to donations previously announced in the *Agriculturist*, we have now to mention one of £10, from the Counties of Lanark and Rentrew Agricultural Society, and £12 10 from the Gore District Society. Active preparations are about being made, particulars of which, together with the Prize List, we may probably give in our next publication.

The Prize offered by the Johnstown Society for the best Essay on Agriculture, evinces a discriminating liberality; and we think the Committee have acted wisely, in confining the competition to persons *exclusively* engaged in practical agriculture. Farmers of Canada, try your pens in expounding the true principles of the noble science, which you have acquired by experience; upon the advancement of which mainly depend, the prosperity and happiness of your country.

AGRICULTURAL SOCIETY OF PRESCOTT AND RUSSELL.

Mr. Sheriff Treadwell informs us that a Depot for Agricultural seeds, implements, &c., has been commenced at L'Orignal, for the benefit of the farmers in these Counties. The enterprise is of a private or individual character, but it will receive, as it deserves to do, the patronage of the Agricultural Society; with which the idea originated. Similar arrangements might easily be made in different sections of the country, to the great convenience and advantage of farmers, and to the furtherance of their necessary and important art. We shall be glad to hear of the example being generally followed.

Canada; Past, Present and Future. By W H Smith. Toronto: Thos. Maclear.

The third part of this useful work is before us. It comprises a minute description of Wentworth and Halton, commences the County of York, and contains a neatly executed map of Middlesex, Oxford and Norfolk. The Directory appended to each County will be found peculiarly useful to the man of business; while the general reader will find much to interest and amuse in other portions of this instructive publication; which cannot fail to become a standard work, in reference to all the important characteristics of Upper Canada. We are glad to hear that it has already obtained, as it justly deserves, an extensive circulation.

Ploughing Match.—We understand that a match for £100 (£50 a side) between the townships of Vaughan and Markham, is to come off at Mr. George Miller's farm, 9th Concession of Markham, on Friday, April 25th. A keen competition is expected.—*Patriot.*

DOMESTIC ANIMALS AT AUCTION.

THE postponed yearly sale of FULL BRED SHORT-HORNS and IMPROVED DIARY STOCK, consisting of about fifty head, will come off at my farm on Tuesday, June 24, 1851 at 12 o'clock, M. I shall sell all the improved Diary Stock which is composed of the finest Short-Horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which composed the improved Short Horns.

I am now breeding the Short-Horns, Devons, and Ayrshires, each seperately and pure, which owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own county Society, [with the exception of last year, when I was not a competitor at either,] it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Diary Stock. Several of the Bulls will be of the most appropriate age for efficient service for the coming season. All cows and Heifers old enough, will be warranted in calf at the day of sale, by my imported Bull "the Lord Eryholme," or my celebrated Bull "Lamartine."

I own two through bred Devon Bulls: one the celebraied old Major, the other, one and a half years old imported by me from Devonshire. One of the above animals will be sold—which one, I have not as yet determined.

A full catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day.

I also have about 20 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to imported Buck "Babraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain Stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this. in case they prove not to be so, it shall be optional with the purchaser, on his *certificate of the fact*, either to receive from me $25 (say twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give $25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm at two weeks old.

Stock purchased to be sent a distance, will be delivered on ship-board or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should not be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivating of the soil, and to benefit the consuming country at large.

All communications through the Post please prepay, and I will prepay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next.

Persons wishing to view the stock at any time will find my superintendant, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851 at Mount Fordham, Westchester County, eight miles from the City of New York, by Harlem Railroad.

April 2.—3t L. G. MORRIS.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his his farm 2½ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirklearington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Bull Meteor, these are Bates's Bulls, and their reputation as stock getters are two well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 8 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy, near Albany, New York.

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, WILLIAM McDOUGALL, } EDITOR, ASSISTANT EDITOR.

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AGRICULTURAL OPERATIONS FOR MAY.

This is a busy month for the Canadian farmer, who has to employ every moment in bringing to completion the various important operations of spring. It is generally a matter of great moment to sow all kinds of crops as early as the weather and state of the soil will admit. Peas and oats should have been got in last month, and the sowing of barley and all sorts of grass seeds should now be completed as quickly as possible. Barley, as we observed in our last, requires a good soil and thorough preparation, or a heavy yield, even in the most propitious seasons, will be quite out of the question. Grass lands intended for hay should be carefully cleared of stones and all kinds of rubbish, which offer such serious impediments to clean mowing; and wherever rough manure is employed, it should for the same reason, as well as for the benefit of the crop, be thoroughly worked into the land. In a word, the improving farmer should now do his utmost to give a sort of *general finish* to his fields, crops, fences, &c., which will impart an air of neatness to his farm, during the rest of the year, and materially aid the progress and amount of his crops.

If cattle have been properly cared for during the winter, the advantages will now be apparent, in their healthy condition and improved monetary value. Lambs and calves should continue to receive special attention, or the finest individual

specimens of the best breeds will be irreparably injured. A sufficiency of nutritious food to the dam, is the chief means of promoting the growth and strength of the progeny. The milk of the mother, when properly fed, contains all the essential ingredients for building up the healty structure of her young; it is in fact a chemical compound, nicely arranged, and wisely adapted to that object. *Milk*, therefore, constitutes the natural food of all our young domesticated animals; and the humane and profitable farmer will make such provision as will ensure them a *sufficiency* of it. But this cannot be done without providing an adequate amount of nutritious fodder, previous to the setting in of our severe and protracted winters.

We are here reminded, and could wish to impress the idea on the mind of the reader, of the intimately natural relation that subsists between the profitable rearing and fattening of stock, and improved tillage. Slovenly cultivation is quite inimical to the rearing of thrifty cattle, even of native breeds; much more of such as are denominated improved, or pure. The field and the cattle yard, act and react upon each other. We have known experienced agriculturists in England, who, in order to judge of the character of a man's farming, that is cultivation, would be content to look into his folds and cattle pens; for if the live stock be all right in amount and condition, the chance is very small indeed, that the rotation and culture can be very wrong. This principle, it should be remembered, is not confined to the British Islands, but is of universal application.

The advantage to a farm of a large number of good and well fed animals, with reference to *manure only*, is understood and appreciated by intelligent and improving cultivators, upon all soils, which a course of cropping has reduced from their pristine fertility. However valuable and indispensible may be the mineral manures, most farmers, especially in a country like Canada, must mainly look to their compost heaps, formed chiefly of animal and vegetable substances, for sustaining the general fertility of their fields.

Entertaining these views, we strongly recommend an extended culture of root and forage crops. The object of the farmer should be to obtain the greatest amount of produce from the smallest space; hence the necessity of a liberal dressing of manure and thorough cultivation. Not a day should now be lost in giving to the land intended for such crops, the last preparatory finish. Most failures are traceable to sowing too late, or insufficient attention to the preparation of the ground and the subsequent management of the crop.

Potato planting should be brought to a close as speedily as possible; the experience derived from extensive observations, in various parts of the world, during several years past, clearly shews the advantage of early sowing, in order to secure a healthy condition of this valuable esculent. The greatest care should be taken in selecting suitable varieties, and sound and ripe seed. The application of large quantities of strong putrescent manures, has been found favorable to the development of the potatoe-disease; whereas quicklime, wood ashes, &c., may be regarded as favorable to the healthy growth of the plant.

In conclusion we strongly recommend to our readers, in all sections of the Province, an extended culture of that invaluable plant—Indian Corn. Several varieties suited to our climate have been already introduced, and where proper attention has been paid to the cultivation and management, a remunerating return has, in ordinary seasons, been made. In situations where early frosts in autumn render the ripening of this crop uncertain, it might be advantageously grown for the purposes of fodder; indeed we think that there is no part of Canada, where Indian Corn might not be profitably raised for the purpose of summer or winter feeding of cattle. We would like to be favored with the experience or opinions of any of our readers on this subject.

WORK FOR THE MONTH.

The season has been in some respects an early one in Canada. Ploughing has been extensively prosecuted, while the operations that follow it are in arrears. In this neighborhood vegetation has advanced slowly in consequence of the cold, raw weather, and in this respect we do not regard the Spring as an early one. The following remarks which we copy from that well conducted journal the *Working Farmer* will suit in Canada for the early part of May.

The dates mentioned may all be regarded as three or four weeks later for this region.

General Farm Work.—Early part of this month light sandy soils intended for general crops may be plowed, and indeed spring plowing for sandy soils is preferable to fall plowing; for although clayey loams are benefited by winter ridging and the consequent pulverization from frequent freezings and thawings, still sandy soils would not be improved by similar treatment, as they would suffer by working, &c.

Although clayey soils, as well as all others, should be plowed as early in spring as practicable, still they should not be disturbed while *wet* The action of the plow is to compact them in lumps, and thus render them unkind and non-absorbants.

Such fields as were plowed last month, but are not yet planted, should be run through by the cultivator immediately before planting, so as to have the surface of the ground thoroughly disintegrated just before sowing the seed; such fresh surface insures rapid vegetation, and buries half germinated weeds too low to interfere with the regular crops. Top-dress winter grains as you now wish to press forward the plants, which could not be done with propriety in the fall, for fear of their being too forward, and thereby more liable to be winter killed.

Attend to water courses, drains, &c., as during the early freshets your mowing grounds may be rendered uneven in growth, by uneven irrigation. If the season has been backward, you may still sow spring wheat, barley, oats, rye, field peas, &c. Beans, early potatoes, &c., may now be sown. Flax and hemp sow. Attend to pastures. Do not turn cattle too early into pasture grounds before the grass has had time to start fairly, and the ground has become sufficiently hard not to be disfigured by them. If you intend to fatten cattle in the fall and winter, you should now plant out carrots, parsnips, &c. You can raise eight hundred bushels of Belgian carrots to the acre, and they will do more service for your cattle and milch cows than four times the quantity of ground appropriated to either hay or corn crops. Cleanse cellars from putrescent substances; plant Indian corn; sow Lucerne; attend to the extermination of insects, &c.

Kitchen Garden.—This is the month for gardening. All esculents intended for raising seed should now be in the ground, and if not done before, do not delay. Be sure they are not in the vicinity of others of the same genus, or they will be sure to hybridize and thus spoil each other.

Keep the unplanted soil in motion, and hoe and weed former plantings. Make artichoke plantations; asparagus; beet seeds; sow late broccoli; start summer cabbage, cardoon, carrots, celery; sow cress; start cucumbers and melons in frames ready to put out in settled weather, (pots,) sow endive; make plantations of horse redish; plant corn; sow leek seed, lettuce, mustard seed, nasturtium; sow onions early both for crops, and closely for pips for next year's planting; put out pips of last year's growth, also top and potato onions; parsley; parsnips; plant peas, potatoes, sweet potatoes; continue to sow raddish seed; plant rochmarole, rhubarb, salsify, sea kale, spinach, tomatoes; sow turnip seed, caulo rapa, brassica rapa esculenta, &c.; pot herbs, &c.

Attend to dressing artichoke and asparagus beds, &c. Plant medicinal herbs, &c. Transplant from hot beds to open ground, lettuces, cauliflower, broccoli, cabbages; and in proper weather egg-plants, peppers, tomatoes, &c., &c.; pumpkins, squashes, &c. During dry days, water seed-beds, late transplantings, &c., until established.

Plant Lima beans, melons and cucumbers in pots under frames, ready to set out as soon as the weather is permanently settled. Those who have no hot-beds or frames, may turn a sod upside down, in a shallow box, and then cut the sod with a sharp knfie in lines to inches apart, and running in both directions across the box, thus it will be cut in squares; plant a lima bean in the manner directed in our article on the kitchen garden; place this box opposite a window in a warm room, and plant out the squares around the poles when the weather is permanently settled.

Orchard.----Look well to peach trees, and see that the peach worm is not at work. Pour boiling water on the lower part of the trunk near the ground, and if a sufficient quantity be used it will *cook* the worm without any injury to the tree; we have tried it fairly, and are well convinced that even three gallons of boiling water may be so used without any injury to trees.

If the shortening in of peaches, apricot, and nectarine trees, was neclected last month attend to it this month.

Manure tress and recollect that they require cultivation. Attend to propagation of scions early and graft such trees as require it. See *Downing's Fruit Trees of America* on this subject.

To injure a man's sight, there is nothing worse than sudden wealth. Let a woodsawyer draw a ten thousand dollar prize, and in less than a month he will not be able to recognize the man that "used to go security for him."

PROVINCIAL AGRICULTURAL ASSOCIATION.

A meeting of the Directors of this Society was held in the Court-House at Brockville on the 19th ultimo, for the purpose of forming the Local Committee and for making the necessary preliminary preparations for the next Exhibition. Present, J. B. Marks, Esq., President; Wm. Matthie, Esq., Vice President; Henry Ruttan, Esq., Ex-President; R. L. Denison, Esq., Treasurer, and Mr. Buckland, Secretary. The office-bearers were met by a number of gentlemen belonging to the Town and neighborhood of Brockville, who evinced the warmest interest in promoting the objects of the Association.

The first business was the formation of the Local Committee, which consists of the following gentlemen:—

George Crawford, Chairman.
James Crawford, Treasurer.
D. Wylie, Secretary.

George Sherwood,	Henry Freeland,
J. L. McDonald,	Dr. Reynolds,
Charles E. Jones,	George Morton,
Robert Watson,	D. B. O. Ford,
O. R. Gowan,	H. D. Jessup.
R. Coleman, jun'r.,	

Ex-Officio Members.

J. B. Marks, President.
T. C. Street, 1st Vice-President.
W. Mathie, 2nd Vice-President.
R. L. Denison, Treasurer.
G. Buckland, Secretary.
E. W. Thomson, ex-President.
H. Ruttan, ex-President.
Hon. A. Fergusson, ex-President.

The meeting then adjourned in order to inspect the ground around the town, so that the most favourable site might be obtained for the Exhibition. When the meeting resumed, it was moved by R. Watson, Esq., seconded by Dr. Reynolds, and

Resolved, That the time for holding the Provincial Exhibition be altered from the 17th, 18th, and 19th to the 24th, 25th, and 26th of September, and that the Secretary of the Provincial Association be requested to communicate the alteration to the Secretary of the New York State Agricultural Society, expressing at the same time our regret that that Society should have chosen to fix the same period for their Exhibition, as that previously decided upon by this Society; and that this resolution be submitted to the meeting of Directors to be held in Toronto in June, for their approval.

Moved by Dr. Reynolds, seconded by G. Sherwood, Esq., and

Resolved, That the site offered by C. E. Jones, Esq., on the elevated ground near the English church, be fixed upon for the Exhibition.

The Committee then examined last year's premium list, and suggested several alterations and additions for the approval of the Directors, who will meet for that and other purposes connected with the Association, on the 10th of June, in the City of Toronto. The premium list will be issued immediately after; in the mean time it will be satisfactory to the public to be assured, that the Directors have good reason to hope that they will be enabled to offer this year a larger amount in prizes than heretofore. To secure, however, this most desirable object the liberal aid of societies and individuals is indispensible; and most earnestly is it to be hoped that such aid will not be withheld. The Town and District of Brockville have handsomely contributed, as have also several societies, and such as have not yet made any grant are respectfully requested to do so without delay.

We have said that the Directors were received at Brockville in the most cordial manner, the mention of one proof out of several will be sufficient.

In the evening they were invited by the officers of the Johnstown Agricultural Society to a dinner at Wilson's Hotel, which was got up in excellent style; George Crawford, Esq., occupied the chair. Several toasts were given and responded to by Messrs. Marks, Ruttan, Matthie, Buckland, Sherwood, Jarvis, Jones, Denison, Gowan, Hough, Watson, Dr. Reynolds, &c. The evening was spent in the most agreeable manner; the objects of the Provincial Association were kept specially in view; and from this friendly and auspicious commencement, the most gratifying and satisfactory results may be confidently anticipated from our next annual gathering on one of the most interesting and picturesque spots to be found on the majestic St. Lawrence.

IMPROVEMENTS IN AGRICULTURE.

During the session of the Legislature of New Jersey, we have sojourned at Trenton for the purpose of placing before the members such evidences as we could furnish, in favor of the appointment of a State Agriculturist. The Bill was presented in the Senate and lost by a *tie vote*, a majority of the whole number being required to pass a bill. The bill would undoubtedly have passed, if other appropriations of a more popular character, requiring large expenditures, had not

rendered the smell amount asked for by the farmers an additional cause of alarm to those politicians who feared being charged with having emptied the Treasury. Among these may be named the House of Refuge, requiring an appropriation of $30,000, and the Common School Bill, requiring a still larger sum. Among those who voted against the bill, we knew of but three who did not express themselves favorable to its passage on its merits, but feared to make any further appropriations at present, and hence, from this fear, the petition of 4000 citizens of New Jersey, 3000 of whom were farmers, was rendered unavailing, and the greatest interest of the state, furnishing nine-tenths of all the taxes paid, is compelled to forego the passage of the only bill they have ever asked for their especial benefit, because a few politicians feared they would be rendered unpopular through the efforts of their political oponents presenting a diminutive treasury, as compared with that of the previous year.

Many farmers who had attended our lectures in different parts of the State, came to Trenton to advocate the Agricultural Bill, and with one accord they represented that the crops of those who had adopted our recommendations had been materially increased, without a corresponding increase of expenses.

Indeed, several members of the House of Assembly were themselves witnesses of similar results on their own farms and in their own neighborhoods; and had the bill passed the Senate, it would have been passed in the Assembly by a large majority.

Within the last three years we have visited many farms in New Jersey, and some of the owners of these farms sent certificates of results to Trenton. One represented that under our advice he had added the missing constituents to his soil, at an expense of only $4,12½ per acre, with proper tillage, and produced, in consequence, the following crops:—Corn 128 bushels of ears per acre, were formerly, with much larger expenditure for manures, but 30 bushels of shelled corn had been produced. Potatoes 310 bushels per acre. Mangold-wurtzel 16 tons per acre, and other crops in proportion. Another (a member of the House of Assembly) represented that on a piece of ground in Passaic County which had been considered of very inferior quality and unworthy cultivation for corn, he had raised, by adding the missing constituents of his soil, under our advisement, 138 bushels of ears of corn per acre, and that his crop of long orange carrots averaged 600 bushels per acre, and that the expenses for fertilization were less than ordinary method by barn-yard manuring.

Another farmer from Monmouth County, represented that by the use of the sub-soil plow, under a recommendation contained in one of our lectures, on a field of twenty acres, and by the application of decomposed bog on another field of similar size, he had increased his corn crop each from 20 to 25 per cent.

Another farmer of Freehold represented that he had raised between 4000 and 5000 cabbages on half an acre, and at the prices at which he had made sales, the returns were at the rate of from $400 to $500 per acre. This land was thrown into garden heart at one operation, and the land left in so improved a condition after the cabbage crop, as to be benefited for future crops more than the whole crop of fertilizers used for cabbages. Many other farmers reported large crops resulting from our advice, and from some neighborhoods large numbers signed statements that the whole crop of the township had been materially increased by our efforts. It was also shown to the Legislature, that we had taken the first premium for our market garden from the American Institute, and that we had raised 1500 bushels of parsnips, 900 bushels of carrots, 800 bushels of ruta baga turnips per acre, and other crops in proportion, but all these facts could not avail in causing the Senate to appropriate a sum only equal to the necessary expenses of a State Agriculturist during the delivery of five lectures in each county in the State.

We asserted, without fear of contradiction, that in no case where we had been furnished with an analysis of the soil, had we failed in increasing the income of the owner more than one-third, and this too, after having advised under such circumstances more than one hundred farmers in New Jersey.

Some members could not believe that we had discovered so much that was new as to enable us to produce such results, and they were right. We do not claim any such credit, but simply that we have put in practice what is well known to the few among the many. We often hear of large crops raised by individuals, whose neighbors produce no such results. In such cases, we visit the growers, and find out, if practicable, their methods, manners, &c., and then by an analysis of the soil, compared with that of the crop, are enabled to advise others so as to enable them to produce similar results. We claim no originality, but merely with the assistance of chemistry, to be able to duplicate on any soil containing a fair average of constituents, the same results which may have been produced on any other soil—all of which may be done by adding the missing constituents to the soil, with such cultivation as the peculiarities of the crop, mechanical condition

of the soil, &c., may require. The Bill referred to will undoubtedly pass next year, and we hope to hear of similar movements in many other states.—*Working Farmer.*

BUTTER MAKING.

We find in the Albany *Cultivator* for May a portion of a valuable and interesting report on the manufacture of butter, which was made last season to the Worcester County (Mass.) Agricultural Society, by John W. Lincoln, Esq. The first requisite laid down for the production of good butter, is *good pastures*—such as produce a sweet and plentiful herbage. White clover and the finer grasses are recommended, and it is important that there be good water at all times accessible to the cows.

Good cows are the second requisite. On this point it is observed—

"There is believed to be a much greater difference in the quality of cows for the butter dairy, than has generally been supposed. It is known that some cows yielding a larger quantity of milk—are of but little value for the making of butter. It appears by the certificates of competitors for the premiums offered by this Society in 1848, for milch cows, that the weight of milk required to make a pound of butter, varied from 17¾ lbs. to 30½ lbs., and these cows, at least in the estimation of their owners, were considered extraordinary animals, as they were offered by them for premiums. The Chairman owns a cow, from less than six quarts of whose milk, one pound of butter was obtained, and has had others, which were considered good cows, the milk of which would not give a pound of butter to twelve quarts; and it is believed the latter quantity is better than is obtained from the average of the cows of this county. Every farmer should make trial of each of his cows separately, and if she is found not to give rich milk, she should be sold or exchanged with one who, for other purposes, may deem quantity of milk of more importance than the quality of it. For the purpose of testing the quality of the milk, a lactometer is a convenient and not an expensive instrument. Good milkers, both as regards quantity and quality, are frequently met with, and their valuable properties, it may reasonably be expected, will be transmitted to their descendants; calves from such mothers should never pass into the hands of the butchers. The quantity and quality of milk may be greatly improved by attention to the feeding of the cow; she is the machine in which the milk is manufactured, and those who wish an abundant supply of that, which is good, must see that the animal has a liberal supply of suitable materials from which to make it."

In regard to churns, it is mentioned that there is much difference in the quantity of butter which is produced by the various kinds, from the same quantity of cream. The results of some comparative trials with Galt's and Robbins' churns, are given, in which the former appeared to have considerably the advantage in this respect. A churn called "R. W. Davis' patent self-adjusting churn," is highly recommended. It is said to churn, gather, and work the butter without its being taken from the churn and without being touched by the hands. As a churn, it is said not to be inferior to any of the rotary churns, and being able to work the butter, it is thought to have a great advantage over all others known to the author of the report. The price is said to be $4,50 to $6,50, in proportion to size. They are made by Fairbanks & Stone, Westboro, Massachusetts.

Rapidity of Churning is discouraged, as tending to produce an inferior quality of butter. On this point reference is made to Prof. Norton's *Elements of Scientific Agriculture*, as follows:

"Several churns have been exhibited lately, which will make butter in from three to ten minutes, and these are spoken of as important improvements. The most carefully conducted trials on this point, have shown that as the time was shortened, the butter grew poorer in quality, and this is consistent with reason. Such violent agitation as is effected in these churns, separates the butter, it is true, but the globules are not thoroughly deprived of the casein which covers them in the milk; there is consequently much cheesy matter mingled with the butter, which is ordinarily soft and pale, and does not keep well. Until the advocates of very short time in churning, can show that the butter made by their churns is equal in quality to that produced in the ordinary time, farmers had better beware how they change their method, lest the quality of their butter, and consequently the reputation of their dairy, be injured."

A brake is recommended for working butter, instead of the hands. A wooden table is thought preferable to marble, to work the butter on.

The mode of manufacture practised by Charles E. Miles, whose butter was pronounced of very superior quality, is in substance as follows: The cream is not allowed to change by standing, before it is churned. Crowell's Cylinder Thermometer Churn is used. After the churning is well done, the buttermilk is drawn from the churn, and cold water put therein, and the butter thoroughly dashed to extract the buttermilk. [It is proper to remark, that the chairman of the committee who made the report, objects to the use of water for this purpose, as "wholly unnecessary, and prejudicial to the butter."] The butter is then seasoned with salt—about an ounce of salt to a pound of butter; it is then thoroughly worked upon a butter table, by the aid of a brake—not allowing the hand to come in contact with the butter. By the use of butter-paddles, it is then moulded into pound lumps, and fitted for the market.

Good salt is regarded as of much importance. It varies much in strength, and none but that which has been proved to be good, should be used.

Vessels for keeping. Stone pots are recommended for this purpose, in preference to wood. If wood firkins are used, they should be made in the most thorough manner, and be thoroughly soaked in strong brine before the butter is put into them.

A good milk-cellar is thought of great importance.

"It should be cool, having windows to allow a free circulation of air. To prevent the admission of the rays of the sun by the windows, and thereby render temperature in the cellar less cool, it would be well to have blinds secured with hinges to the building at the upper side of the blind, that it may be turned up against the building and buttoned there when not in use, and when wanted let down to a horizontal position, where it will be retained by resting on stakes at its extreme corner, in which situation it will screen the cellar, and at the same time allow a free circulation of air. The milk vessels should not be allowed to stand on the bottom of the cellar, but should be placed on shelves suspended from the top in such manner that the milk may have the benefit of the pure air. Care should be taken that no milk be spilt, or any thing allowed to be therein that may produce any unpleasant smell, which will be sure to taint the milk and thereby injure the butter."

Lastly, *a good dairy-woman* is considered of more importance than all.

"On her skill and good management frequently depends the question whether the farmer is to obtain the highest market price, or a sum insufficient to pay for the labor bestowed in making the butter. The most perfect cleanliness must be observed in all the stages of its manufacture. The pan and pails, should be frequently washed, scalded, and sunned, and all the utensils kept perfectly sweet."

INDIAN CORN FOR FODDER.

The practices of raising Indian Corn to be fed to stock in an immature state, either green or dried, is not uncommon. It affords more forage, probably, than can be obtained from any other crop. It has been generally sown broadcast, harrowing in about two bushels of seed to the acre. But experience has proved that it is a better way to put the crop in drills, on account of the advantage it gives for destroying weeds. In broadcast sowing, the weeds often get the start of the corn, and prevent its growth, more or less.

In drill planting, the seed may be put in with a machine, drawn by a horse, by which the work is executed with dispatch. The rows may be from two to two and a-half feet apart, and it is best to use seed enough to have the stalks thick and fine, as such are eaten better by stock than larger ones. The crop may be kept clean by the cultivator, which should be passed through the rows as soon as the corn is fairly above ground.

The value of the crop depends somewhat on the variety of corn chosen. It is sometimes recommended to take the large southern corn, for this purpose. It may give as large, perhaps a larger crop, but stock do not like it as well. The best variety is the common large sweet corn. It makes a good growth, tillers, or suckers much, and the fodder has a peculiar sweetness which induces cattle to eat it with more avidity than they will eat that of any other kind of corn. A farmer in this vicinity who planted considerable corn last year, for feeding out while green, had three kinds of seed; southern, yellow or Dutton, and sweet corn. He began cutting the sweet, using it to feed stock which was to be exhibited at the State Fair. They ate every bit of it with a good relish; but when the sweet corn was gone, and the usual quantity was cut and fed from the Dutton and southern, the cattle discovered the difference at once. They smelt it over, tossed it about with their noses, and finally would not eat it without wasting more or less. The same thing has been noticed with hogs, when the corn

crop has been cut up and fed to them while the ear was soft. They would eat the sweet corn, stalk and all; but would leave much of the other, though both were in the same state of ripeness.

The Indian corn plant, in its green state, contains so much sap that it is with difficulty dried so that it will keep well—it is very liable to become sour and mouldy, in the barn or stack. On this account many do not attempt to keep it till winter. Its use, however, as green forage, is every year increasing. Dairymen find a great advantage in feeding it the latter part of summer and in autumn, when grass is generally short, and often very scarce, from the effect of drouth. For this purpose it is sown at intervals in June, and as late as July, on good ground, and the crop gets forward so that it may be cut in August; and as the lots from the different plantings come in successively, they may afford a regular supply till hard frosts come. It is fed in mangers, in yards or sheds, or carried to grass fields—cutting it in such quantities as are needed from day to day. It may be cut, if required, when it is not more than a foot high, as in such cases it will start again and afford a second cutting; but it is deemed best when the stalk is fully grown and the grain is beginning to form. If the crop is to be dried for winter use, it is best to let it stand till the top or "spindle" begins to die, as it will then contain less water, and can be cured with less labor. A good mode of curing, is to cut it in fair weather, let it lie (as thin as possible) and wilt one day; then bind it in small bundles, putting the band as near the top as practicable, and gather the bundles into small shocks, open at the bottom, and let them stand till sufficiently dried to be put in the barn or stack.—*Albany Cultivator.*

QUANTITY OF FLAX-SEED FOR AN ACRE.

The Albany *Cultivator* in answer to a correspondent remarks that the quantity of flax-seed proper for an acre may vary according to the object. If the crop is destined for seed, it is probable less than a bushel might give as large a yield as more; but if lint or fibre is the object, more seed would be required. We notice in the report of a discussion at a late meeting of the Council of the Royal Agricultural Society, Mr. Marshall, M. P., said—"With regard to thick and thin sowing, that question had reference to the object of the cultivator, namely, whether a fine fibre and little seed were required, or a coarser fibre with a full crop of seed. On the banks of the Lys, in Belgium, where the finest flax had been grown for centuries, and used for making the finest lace, they practised thick sowing, 3½ bushels per acre, and obtained about 14 bushels of seed per acre; but the stems were long and straight, without branches, and the longest fibre was obtained. In Ireland and Russia thin sowing was practised, from 2 to 2½ bushels per acre, and from 16 to 20 bushels of seed were obtained; but the stems of flax branched out more, and an inferior fibre was the result.

PRIZES FOR THE IMPROVED BREEDS OF CATTLE.

To the Editor of the Canadian Agriculturist.

Sir,—I was asked by a gentleman of considerable experience in England with all descriptions of cattle, why more premiums were allowed to Durham cattle than other pure breeds?—The Royal Agricultural Society allowing the same amount for Herefords and Devons as Durhams? If any one will state why the latter are more deserving preference in Canada than in England, I may trouble you with some reasons to prove the contrary.

I am Sir,
Your obedient servant,
Dan'l Tyb.

Wilmot, April 7th, 1851.

[Our pages are open to the discussion of the questions involved in the above communication; and we shall be happy to hear again from our correspondent. The principal reason why the Provincial Association offers more prizes to the short horns than to other pure breeds, we take to be the fact, that the Durham stock is by far the most numerous, and the range of the competition therefore much wider. In fact, no Herefords, we believe, have ever been shown at our Provincial Exhibitions, except a few that were exhibited in the Foreign department, last year, by Americans; and the number of pure Devons is as yet very inconsiderable. The Ayrshires, in the Eastern Section of the Province are, we understand, increasing. It is an important and legitimate subject for investigation to ascertain the *relative* adaptation of the various breeds of cattle, and other classes of live stock, to the economical and physical conditions of this country.]—Editor.

Fences.—Examine the fences which enclose your fields—*do it yourself*, and have every weak point made strong. Failing pasture tempts stock to break in and destroy. Care in this regard *now*, may save you from vexation and loss hereafter.—*Germantown Telegraph.*

A REGISTER FOR IMPROVED STOCK IN CANADA.

To the Editor of the Canadian Agriculturist.

DEAR SIR,—The Agricultural Society of the united counties of Frontenac, Lenox and Addington, having lately purchased several Bulls and Cows of the Durham variety, for the purposes of breeding, it has occurred to several of us, that a Provincial list, or if I may presume to dignify it, by the cognomen,—"Herd Book," in which the pedigrees of all animals of the improved breeds should be fully inserted, would prove generally interesting and useful. Will you, or any of your readers, turn your attention to the subject? The matter might perhaps be taken charge of by the Provincial Association.

I remain yours, truly,
J. MARKS,
President Agri'l Asso'n Upper Canada.

[We think the above suggestion of great importance, and that it should be brought before the Board of Agriculture as soon as that body is organized. A full pedigree should be given with every animal exhibited for a prize at the Provincial Association. We recently spent a day most agreeably with Mr. Marks and several of his intelligent and enterprising neighbors; and we were particularly gratified in viewing the live stock, including both cattle and sheep on the farm of Mr. Wm. Ferguson, the respected Treasurer both of the County and Agricultural Society.]—EDITOR.

THE TURNIP-FLY AND THE MEANS OF ARRESTING ITS RAVAGES.

Early turnips bring so a high price in the New York and other markets, that every means should be tried to do away with their enemy, the *flea-beetle*. We succeeded in raising early turnips two years since in an apple orchard. The continued falling of blossom leaves from the apple trees kept off the fly, while the turnips planted beyond the outer rows of the trees were all cut off. In Monmouth County, New Jersey, early turnips are raised with more certainty than any where else in our vicinity, and $500 is often realized for the crop of a single acre. It will be observed in the following article, that dissolved bone-dust and guano are recommended to push forward the young turnips beyond the reach of the fly. An admirable manure for turnips may thus be prepared:—Dissolve five bushels of *sugar house bone-black* in dilute sulphuric acid—add this solution to a half cord of swamp muck or other divisor, with which one hundred pounds of Peruvian guano has been previously mixed, and then add a solution of 50lb of potash scrapings, and apply the whole to one acre for turnips. The crop will be more than double what would result from the application of four times the value of this compost in barn-yard manure, while the value of the turnips per bushel will be greater than if raised with dung. Messrs Barr & Atterbury, No. 25 Cliff street, New York, are preparing to supply farmers with sulphuric acid in an unfinished state, equally good for use as a solvent for bones, at a reduced price as compared with the ordinary mercantile article. Mr. J. J. Schofield, of Morristown, New Jersey, has raised by the use of proper fertilizers, 1400 bushels of Ruta Baga turnips from one acre.—[*Ed. Michigan Farmer.*

Among the very useful societies which are at work throughout the country, we hardly think there is one which for the same small amount of income effects so much good as the Chimico-Agricultural Society of Ulster. Hailing, as we always do, anything calculated to benefit the sister island in her agriculture, and consequently in her arts and morals and civilization—for as sure as agriculture becomes a scientific pursuit, so sure will these follow in its train—we rejoice to find this invaluble society still at its work of improvement; and the articles in its paper, the discussions at the meetings, and above all, the presiding genius of Professor Hodges, its chemist, show that, with means ridiculously small, it has accomplished and is accomplishing wonders.

At the risk of appearing to prefer "pork in the dog-days," we cannot help, even at this season, alluding to a discussion which took place before the Society on the turnip-fly, and the means of arresting its raviges, because the good sense of the remarks made, the intimate acquaintance with the natural history, habits, &c., of that insect, were most creditable to the speakers, and would do credit, in fact, to the *conversaziones* of the Entomological Society—if, indeed, its discussions were ever of so practical a character.

We need hardly say that the insect spoken of was the flea-beetle—the *hal.ica nemorum*, a minute skipping beetle, with ten straw-colored stripes upon each of its wing-cases, which attacks the turnips just before the plumule is developed into leaf, and cuts and consumes the whole of the cotyledon leaves, so that the plant dies, and all this is generally the work of a day. A farmer will look anxiously for his young plants—he will see them spring up with vigor and regularity—he will watch them two or three days—there is a broad, clean expansion of leaf, and the plumule is just bursting into "rough leaf," as it is termed, when, lo! thousands of minute insects will make their appearance as if they had dropped from the clouds, and the whole crop will disappear in forty-eight hours. And if the crop be white turnips, he may sow once every day, they never will recover. If they are swedes, however, having much more tenacity of life, they will survive, if only the plumule is left uneaten. Once let the secondary leaves be developed, and all is safe: they may be

there, and eat to their hearts' content—they may do injury, but they will never destroy the crop.

The remarks made on the natural history of the insect did credit, we said, to the speaker, and especially the paper of the Professor. He says, as to this point, that if they examine the turnip, leaves in the months of July and August, they will find the eggs deposited, which are nearly the color of the leaf itself. In ten days the larvæ or maggots, of a white color are hatched, and immediately betake themselves to the substance of the leaf, between the upper and lower skin, and then consume the cellular substance of the leaf, forming a series of net-work in it, burrowing in a mass of shapeless mazes, and wonderfully avoiding each other's course in the leaf. For sixteen days they thus proceed, doing little apparent injury indeed, and at the conclusion of this term of probation, they drop out and bury themselves about two inches in the ground, there to change into the almost motionless pupa, in which they remain about fourteen days more, and at last emerge in the perfect form. During winter it betakes itself to the crannies of bark of trees, stubble, &c., to be ready to emerge as soon as the turnip or any of its congeneres make their appearance, especially the charlock or wild mustard, which is the "early spring food" for a host of these vermin; and it will often be observed that a dozen to a score of these insects are attacking a single plant in the month of April, and before any turnips could be available for its use.

The review of the remedies proposed for this pest is very sound and prabticable. Snuff, assafœtida, &c., applied to the seed are very properly discarded. Nitrate of soda applied to the seed is spoken of with more favor. Linseed oil and sulphur applied in the same manner are spoken of, we think, also with deserved disfavor. Mechanical modes next come under review; and the ingenious one of Mr. Paul, who sows a plot decoy turnips sometime before his crop, and then catches the intruderes in a net, is amongst the most ingenious, and not unworthy of notice. The painted board as a trap, against which the insects jump, and are detained by the paint is also noticed; but we fear it is but an ineffectual remedy.

The most efficient cure, however, depends on two facts—first, to keep the land as clear of charlock, &c., as possible, and then to push on the plants in their early stage with such a degree of rapidity as to overcome the attack. Hence, we hardly ever knew a soil in fine tilth, manured well with guano or dissolved bone, the turnips reasonably thick, that were totally dissolved. We must say that we have seen striking instances of a powdering of lime preventing the destruction of the plants. We one season witnessed this at Leyfield, near Newark, in Nottinghamshire. Mr. Parkinson had a field most vigorously attacked. He dusted the plant by hand with lime, two to four bushels per acre. One piece was left for experiment-sake, or from falling short of lime, unsprinkled. The crop was saved, with the exception of the few undusted rows, which were lost.

We cannot help, however, expressing our strong approval of the *prevention* noticed in the discussion before alluded to, viz., till well, keep clean, and use some stimulating manure: this with plenty of seed, will scarcely ever fail of preventing the destruction of the crop.—*Gardeners' and Farmers' Journal.*

AGRICULTURE AND IMPROVEMENTS AT PERTH—COUNTY OF LANARK.

For the Canadian Agriculturist.

The Perth Agricultural Society, has now been in existence something over 10 years, and has proved of much benefit to the surrounding Townships. Compared with its resources, it has expended liberal sums in the purchase and introduction of valuable and improved breeds of Sheep, Hogs, Horned Cattle and Horses, as well as seeds and Agricultural implements. It has been the means of gathering together the friends of the farming interest here, and of circulating a great amount of Agricultural information. As one instance of an improved state of feeling, I mention the fact, that while at first, the very common prejudice against book farming existed, so much so as to prevent the perusal of an Agricultural paper except by a very few persons, we now circulate regularly every month something like 80 copies of Agricultural papers. A spirit of enquiry has thus been created—or to use other words, the ground has been prepared—good seed has been sown, and we have every reason hereafter to expect a bountiful harvest.

The officers for the current year are—

W. Spalding, Esq.	President.
Thomas Cuddie, John Moderwell, Alexander Ferguson,	Vice Presidents.
W. O. Buell,	Treasurer.
Thomas Thompson,	Secretary,

besides a large and active managing committee, whose names I cannot send you, not having a list by me.

A fresh premium list has been prepared for 1851,—a show appointed for September next—arrangements made to pay premiums in cash on the ground—and generally speaking, the Society is in a vigorous and flourishing condition.

W. O. Buell.

Perth, April 18th, 1851

P. S. If the projected Railroad from Montreal through this place, becomes, as there is reason to hope, a great *fact*,—our Farmers will be placed in a most prosperous and enviable position. We will then put in *our* claims to have the Provincial Exhibition at Perth.

☞ Apply your soap-suds to your grape vines and rose bushes; they will be benefited byit.

ENGLISH FARMING.

A farmer writing in the *Cumberland Pacquet* thus describes Mr. Hudson's farm at Castleacre:—"I went some time since to Castleacre, to visit my friend Mr. Hudson, whose name and writings are well known in the agricultural world; and I need not say I met with a most kind, liberal, and unostentatious reception. It is 28 years since Mr. Hudson took the Castleacre farm, under Lord Leicester, (then Mr. Coke), after having cancelled five years of the old lease, by which he lost £500. His rent was then £1,500 per annum for 1,400 acres. Seven years ago the lease was renewed for 21 years, at £1,600 per annum—a fair rent at that time; but when we consider that the saleable value of the estate has been increased by Mr. Hudson's industry and outlay to the extent of not less than £10,000, it is to be presumed that he would get a renewal of his lease on liberal terms; or otherwise that he may, during the next seven years, endeavour to withdraw from the land some reasonable portion of the capital he has invested in it. Mr. Hudson referred to his books to show that during his tenancy he has laid out in oil-cake and artificial manures £55,000. The oil-cake is laid on the land after passing through his cattle in the act of feeding them, but still it is money laid out in manure. This year his outlay is for 200 tons of linseed cake, at £60 10s. per ton, £1,250; 56 tons of Peruvian guano, £560; nitrate of soda, sulphuretted bones, &c., £400 more; besides Egyptian lentils, Indian corn, &c., for feeding purposes. He is now feeding cattle as the quack advertisers would feed us, namely, on Revalenta arabica, which is said to be ground Egyptian lentils, to the number 160 beasts, besides 100 of lean stock and cows, all of which will be turned into cash by May-day. They are lodged in eleven straw-yards, with sheds all round the quadrangle, and all abundantly supplied with food and water. With the cattle associate a good many growing pigs, which are quick enough to pick up a living amongst their betters. Mr. Hudson is preparing three beautiful Devon oxen for the Smithfield show. They appear small animals, but of excellent form and quality, and the fattest one is estimated to weigh 90 score, which at 6d. per lb. is £45; and if he obtained a £20 prize the ox will pay well. The mangers these animals feed from have slate bottoms, which are both clean and very durable. Mr. Hudson has 2700 sheep, 2500 of which, after their fleeces are off, will be sold in Smithfield before Midsummer, the breeding ewes being retained. The wool will be sold before Christmas, 1851, Mr. Hudson making it a point to adopt the commercial maxim of selling all he makes, whether it be beef, mutton, pork, corn, or wool, before his annual stock-taking. From about the end of November he sends about 150 quarters of grain to market weekly, until all is sold. His land sown and sowing with wheat this year is 500 acres, in the fields 35, 40, and 50 acres each, and in each field the crop is stacked on circular bottoms and iron posts two feet high and three feet apart. His circular stacks are 27 feet in diameter at the bottom; of symmetrical form, and beautifully trimmed. His barley stacks are oblong, 60 feet long by 20 feet wide, and not on raised bottoms; so that the rats, poor things! are kept on barley instead of wheat. Mr. Hudson paid £2950 in wages in 1849, and £2700 in 1840, and usually receives from £8,000 to £10,000 per annum from Smithfield market, according to the price of meat, now considerably less, the price of meat being too low to pay. He has put on his turnip land this year 3,000 tons of yard manure, and on his wheat land 2,000 tons; besides guano, bones, and other things. When I visited them, they were ploughing a little field of 35 acres with four pairs of oxen; and as they finished a ridge, six or eight feet wide, and while the mould was fresh and moist, the seed-drill followed; and after the drill came the harrow to finish with—the three operations going on together. I asked "what crop had you on this last?" "Turnips." "When did they come off?" Yesterday. We hauled off half, and feed off the other half with sheep, and they finished their feed yesterday. We never let the land lie—we plough and sow directly we get the turnips away." "Well but where are the weeds?" "There are none, the turnips are kept perfectly clean. The same principle is adopted in turnip sowing, we put in the seed instantly the plough has passed over it." Mr. Hudson uses Howard's (of Bedford) patent plough. He bought a dozen of them four years ago at £4 15s. each. His dibbling machines cost £60 each. He has six road waggons, 18 Gloucester harvest waggons, 12 two-horse tumbrils with iron bottoms; 4 light Gloucester waggons for hay and light work, and a few one-horse carts—all made on the premises. His saddlery and harness are all repaired on the premises. And one of his steam-engines was made at home. This is all so different from the extent and routine of an ordinary Cumberland farm, that you may think I am romancing, but you must come and see, and then you will believe. Mr. Hudson has two stationary steam engines, of 12 horse power each, on different parts of the farm; and he finds they are not sufficient for his work, and is building a third. The castings are made in the village; and his engineer and blacksmith, with their forges and lathes, put them together. One of the engines was at work threshing barley, two men were in the stacks two loading the waggons, and two pitching from the waggons to the engine, another receiving the grain in swills, from which he returned it into another whirligig to have the beards broken off. The straw came out at another place, and was pitched away; and a cloud of chaff and dust showed where the winnowing was going to. The same engine was, at the same time, pumping water, grinding Revalenta arabica, and breaking oil-cake. The same machine also presses linseed for extracting the oil, which is put into large wine pipes and sent to America for sale. and the cake goes to feed the cattle. There is also attached a flour mill, as well as a barley-flour mill, for grinding the refuse corn, beans, &c., for feeding purposes; a saw mill and other conve-

niencies. The cart-wheel felloes are cut out in segments by by the machinery of the engine, and much other work done by steam agency. Mr. Hudson has 40 work horses and 18 working bullocks. The latter work double (? half) shifts, viz., two oxen in a plough—he keeps 4 ploughs at work 10 hours a day, and they plough from one and a quarter to one and a half acres daily each plough. The straw is cut into chaff; the turnips are sliced, and other roots are cut by the steam machinery. Mr Hudson has two suits of clothes, one fine and the other coarse, and his wife has a beautiful shawl, all of their own wool. As for a thistle growing on the farm, you might safely offer a guinea for it; and the land is, for 1400 acres, like a garden. Women and boys are constantly employed picking up every stray weed, and sometimes they contract for it by the acre. Altogether, the farm, the farmer, and the style of farming, is such as few Cumberland farmers can have any idea of."

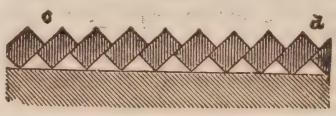
ON SOWING, BROADCAST, DRILLED, AND DIBBLED—THICK AND THIN—AND AT DIFFERENT DEPTHS.

We have briefly noticed the numbers of the "Farmer's Guide to Scientific and Practical Agriculture" by H. Stephens, F. R. S. C., assisted by Professor Norton of Yale College, as they have appeared. It is an admirable work, and is now published in a form and at a price that will enable every intelligent farmer to possess himself of a copy. Nearly every operation of the farm is explained and illustrated in a plain and simple manner. We have at some expense procured the engravings which follow, showing the importance of good ploughing, and drill-sowing. We shall copy other useful matter from this excellent book, in future numbers.

Broadcast sowing.—Of all the modes of sowing the seeds of the cereal crops, none requires so much seed as the broadcast. The usual quantity of seed sown is 3 bushels of wheat, 4 bushels of barley, and 6 bushels of oats to the acre. Thirty years ago the quantities of seed sown were larger, viz.:—4 bushels of wheat, 6 of barley, and 7½ of oats. These quantities I myself have sown.

However well the land may be ploughed, the seed sown broadcast will braird irregularly—some falling into the hollowest part of the surface, some upon the highest, and some being scarcely covered with earth by the harrows—some sliding gently into the rut after the tines have passed, whilst others are carried as deep into the ruts as the tines themselves penetrate. To harrow the land smooth, previous to the sowing of the seed, would not cure the inconvenience of irregular covering, since it is impossible to cover so large a seed as that of the cereals, merely with the action of the tines of the harrows, without the assistance of a rough surface of mould. On smooth harrowed ground the seed would be left on the surface, and even harrowing, as presently conducted, leaves many seeds exposed, to be picked up by granivorous birds. What I have stated may be illustrated by the following figures, where from *c* to *d*, fig. 1, are represented furrows, well and regularly

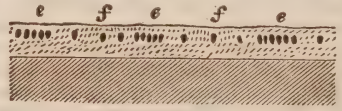
Fig. 1.



WELL-PLOUGHED REGULAR FURROW-SLICES.

ploughed; but it is obvious that although the seeds will fall successively more into the hollows between the furrows than upon the sharp points, when scattered broadcast from the hand, yet some will fall on the points and sides of the furrows. The seeds will lie in the ground, as shown in fig. 2, where those are thicker at *e*, which fell into the hollows of the furrows, and thinner at *f*, which stuck upon their apex, or on their sides. But even their position will not be so regular as is here represented, where all the seeds are at the same depth from the surface, for some will be deeper

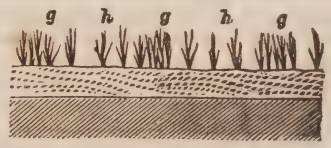
Fig. 2.



THE POSITION OF SEEDS WHEN SOWN ON REGULAR FURROW-SLICES.

than others, some too deep, and others too shallow, whilst not a few will have been left exposed on the surface. From such a deposition, as in fig. 2, the plants will come up in the irregular manner represented in fig. 3, where *g* are clumps

Fig. 3.

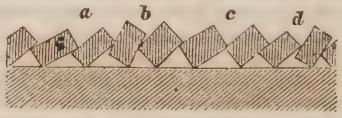


IRREGULAR BRAIRDING FROM EVEN REGULAR FURROW-SLICES.

of too many plants, and *h* straggling ones too far asunder. But in reality, the seeds having been deposited at different depths, the plants will present greater irregularity of height than is shown in fig. 3.

But when the land is ill ploughed, the case is still worse. Fig. 4 shows the irregular manner

Fig. 4.



ILL-PLOUGHED IRREGULAR FURROW-SLICES.

in which the furrows are placed by bad ploughing.

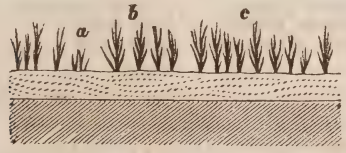
Bad ploughing is attended with bad consequences at all seasons, in forming the seed-furrow for any kind of crop, but particularly for a cereal one, inasmuch as irregularity of surface cannot be amended in this by the cleansing implements in future operations, as might be the case in a green crop. Seed sown on the irregular surface of fig. 4, where *a* is a narrow deep furrow, *b* a shallow one, *c* a large one of ordinary depth, and *d* one having a high and steep side, will be covered in an irregular manner, as is shown in fig. 5, where some seeds are clustered together and covered in a shallow manner at *a*; others also clustered, but

Fig. 5.

IRREGULAR DEPOSITION OF SEED ON ILL-PLOUGHED FURROW-SLICES.

buried deep, at *b*; whilst many are scattered irregularly at different depths, at *c* and *d*. It is obvious, from such a deposition of the seed, that the braird must come up in a very irregular manner, likely to affect the future progress of the crop; for we have only to look at such a braird to be convinced that the plants have not all the same chance of arriving at maturity at the same time; and, if a crop does not mature alike, the grain cannot be alike in the sample. In fig. 6, where the seed

Fig. 6.



IRREGULAR BRAIRD ON ILL-PLOUGHED FURROW-SLICES.

was sown very deep, it will produce plants that will come up late, as at *a*; while that covered in a shallow manner will send up plants early, as at *b*, which will push on in growth when the weather is favourable, and get far in advance of the late ones at *a*. The remainder at *c*, coming up in a more regular manner, will form the best part of the crop.

Drill-sowing.—One evident advantage of sowing with a drill over a broadcast machine, is the regular deposition of the seed at one depth, whatever depth may be chosen. Fig. 7 represents the seeds deposited at regular intervals, from *a* to *a*. The figure is supposed to be a cross section of the

Fig. 7.

REGULAR DEPTHS OF SEED BY DRILL-SOWING.

ground, as also of the seeds in the lines of rows as sown with the drill. The braird is shown also in cross section from the drilled seed in fig. 8 from *c* to *c*, where the plants seem all of the same

Fig. 8.

REGULAR BRAIRD FROM DRILL-SOWN SEED.

height and strength, and their produce may reasonably be expected to be of the same quality. What makes drilled seed be certainly retained at a uniform depth is the harrowing of the land into a smooth state before the drill sows the seed.

RAISING DUCKS.

The duck, though a very valuable fowl, and usually commanding a high price in our market, has one great objection, which is that they are unmerciful gormardizers, and are difficult to raise. The eggs are generally incubated by hens. In situations remote from water they rarely do well; their propensities being acquatic, and standing water essential to their health. Where there are ponds or streams the duck is probably as profitable as any fowl; they are very prolific, and their eggs are preferred by many to those of hens.

Meat is essential to the duck in dry situations. Where they have free access to ponds, they feed on various reptiles, and species of the acquatic grass which they find beneath the surface, and which is a very excellent substitute for animal food. When insects are abundant such as grashoppers and the like, they require no supply of meat, as they obtain a sufficiency of animal food themselves; but when this is not the case, they must be furnished liberally or they will assuredly die. Potatoes boiled and well mixed with meal makes an excellent article of food for the duck. They become fat when fed on it, and when in preparation for market is perhaps the best food that can be given to them except meat. Young ducks require great attention. Their voracious habits often induce them to eat to repletion, and many die quite young, from no other cause than pure stuffing.—*Ger. Tel.*

MINDS SEEN ON MOUNTAINS.—As upon a mountain you get a new and extended view of the surrounding scenery, so you there obtain fresh insight of the hearts and feelings of your companions. The soul seems to expand in the vastness and sublimity of the prospect and exhilarating air, as the night-closed petals of a flower open to the influence of the morning sunshine.

THERE is in every human countenance either a history or a prophecy, which must sadden, or at least soften every reflecting observer.—*Coleridge.*

AFFECTION or love is what constitutes the life of every person, for whatever the affection is, such is the man.

Great Ploughing Match between Scarborough and Vaughan,

FOR A PURSE OF £100.

The notice which follows having been written by one of the editors for the columns of a cotemporary journal, is copied from that paper :—

This second trial of skill in the ancient and important art of ploughing by the same competitors, came off last Friday the 25th April, in a field belonging to George Miller Esq. of Markham. The day was brilliantly fine and the atmosphere warm and summer-like, and the number of spectators equalled, if not exceeded, either of the two former occasions; being estimated at four to six thousand. Our readers will recollect that the first match of this series took place in Pickering between Scarborough and Whitby in the spring of 1849, when the former was declared the winner. Last year the Township of Vaughan challenged Scarborough, when the latter again proved victorious, and the challenge was repeated this year with a like result.

As on the two previous occasions, the number of ploughmen on each side was twenty, and the ploughs used were invariably made of iron, on the approved and well known principle of the Scotch swing plough; indeed several of the implements employed were imported from the celebrated manufactory of Gray; the remainder were made by different parties in the Province. At the first competition in Pickering, we observed a few wooden ploughs, which, however, have not appeared in subsequent contests. Of the general superiority of the Scotch swing plough, when competently managed, their can hardly be two opinions among practical ploughmen.

The work done on the present occasion, presented, perhaps, no very decided improvement upon that of last year. Yet whether viewed as a whole or in any of its details, it must be acknowledged to possess very great merit, and would be considered highly creditable in the first cultivated districts of the mother country. The state of the ground was scarcely so good for the purpose as that for last year, and we observed that some of the ridges or lands, were not of uniform convexity, a circumstance of course unfavourable to a perfect result. There was, as heretofore, in the Scarborough work a distinctive and uniform style, if we may be allowed the expression, which gave it a distinctive character; the furrows were not only even and straight, but they were laid at precisely that angle which meets the eye most advantageously. The Vaughan ploughing, although much of it excellent, and none of it bad, lacked that characteristic as a whole; and we very much doubt whether the Vaughan ploughmen had previously practiced with any thing like that unity of purpose, which was so evident in their opponents. The ploughing on both sides must be considered good enough for all practical purposes; and we consider the objects of honorable competition in regard to these two Townships to be, at least for the present, accomplished. We see no likelihood of any good resulting from a repetition of the challenge, for several years to come. In the mean time, let other Townships enter the lists; for it must be acknowledged that these contests have already had a most beneficial influence on the cultivation and productiveness of the country.

The following are the names of the ploughmen, with their origin and descent. All are considered Canadians who learned to plough in Canada whether they were born here or in Europe.

SCARBORO PLOUGHMEN.	VAUGHAN PLOUGHMEN.
Wm. Weir, Scotch.	Peter Frank, Canadian, German Descent.
John Crone, Canadian, Scotch Descent.	Wm. Wetherspoon, Scotch.
William Hood, Canadian, Scotch Descent.	Samuel Mussleman, Canadian, German Descent.
James Weir, Scotch.	Walter Dalzell, Scotch.
Walter Hood, Canadian, Scotch Descent.	Jas. Somerville, Scotch.
Andrew Bertram, Scotch.	William Burton, Canadian, Scotch Descent.
Henry Mason, Canadian, English Descent.	William McNair, Canadian, Scotch Descent.
Arch. Thompson, Canadian, Scotch Descent.	J. Campbell, Canadian, Scotch Descent.
Geo. Burke, Canadian.	Jos. Frank, Canadian, German Descent.
Thomas Crone, Canadian, Scotch Descent.	William Keffer, Canadian, German Descent.
John Wakefield, Canadian, English Descent.	James McNair, Canadian, Scotch Descent.
Robt. Patterson, Scotch.	R. Thompson, Canadian, Scotch Descent.
And. Browning, Scotch.	Dun. Matthewson, Scotch.
John Crawford, Scotch.	G. Charelton, Canadian, English Descent.
Jas. McCowan, Scotch.	Duncan McClair, Canadian, Scotch Descent.
Jas. Patterson, Scotch.	Geo. Smith,
John Patterson, Canadian, Scotch Descent.	Arch. McMillen, Scotch.
Geo. Evans, English.	Henry White, Canadian, German Descent.
W. Maddison, English.	Alexander Muir, Canadian, Scotch Descent.
John Weir, Scotch.	

The following are the names of the Judges :

JUDGES FOR VAUGHAN.—Benjamin Jennings, King; Wm. Lawson, Markham; Joshua Clark, Pickering.

JUDGES FOR SCARBORO'.—Robt. Ray, Toronto; John Gibson, Markham; — Weir, Reach.

Each of the competing townships chose one umpire, and casting lots for the third, it resulted that Scarboro' chose the third umpire. Their names are,

Umpire for Vaughan—Mr. Leask.

Umpires for Scarboro'—Archibald Cameron, Toronto; William Watson, Whitby.

A substantial dinner was prepared by Mr. Armstrong of Markham Village, to which the ploughmen and 4 or 5 hundred persons sat down after the contest was over. His Excellency was expected but did not honour the occasion by his presence. Col. E. Thompson President of the County Agricultural Society sat at the head of the table. The usual regular toasts were drunk, and appropriate music by the band and songs followed. The award of the judges not being finished until late in the evening the successful competitors were not toasted but the "Ploughmen" without distinction instead. One of their number briefly returned thanks. The "Agricultural Association" was replied to by the worthy Secretary of the Association, Mr. Buckland. He spoke of the great good already accomplished by this noble institution and the bright prospect of usefulness before it if properly sustained by the

people. As a further proof of what could be done by such agencies he referred to the achievements of the English, Irish, and Scotch Agricultural Societies. The "County Agricultural Society" was replied to by the Chairman, Mr. Thompson, who after pointing out the progress that had been made in agricultural improvement by County and Township Societies, referred in complimentary terms to Mr. Perry, the member for the Riding, who was the originator of these ploughing matches between townships. F. Jackes, Esq., the Warden of the County, replied to the toast, "Township Societies," and pointed out their benefits. "The Press" was proposed by the President in a few remarks upon its usefulness, particularly in disseminating information in reference to such performances as had been witnessed that day. Mr. McDougall of the *North American* being called for, replied. After a brief allusion to the subject of the toast he adverted to the President's reference to Mr. Perry, and stated that he was happy to learn from some members of the Hon. gentleman's family that he was rapidly recovering from his late illness. He had little doubt, that if no untoward change took place, their worthy and independent member would be able to take his place in parliament on the 20th May or soon after. As the originator of these ploughing matches which promised so much benefit to our agricultural interests he thought on that occasion they could not do less that drink his better health. He begged therefore to propose "The health of Peter Perry—may he soon be restored." The toast was received with three times three. One or two other toasts followed and the company separated.

We understand that the Judges could not agree in their award and the matter was referred to the umpires.

"KNOWLSON'S COMPLETE FARRIER."

HOW TO CHOOSE A HORSE—CURE FOR A COLD ASTHMA, ETC.

We have frequently been asked to publish receipts for various diseases in horses, cattle, &c., but we have felt a reluctance to do so without at the same time presenting some information relative to the diseases themselves. A remedy that might be good in a particular case, would perhaps be useless, if not injurious, in another case of a similar kind. We have met with a little work of high reputation—"Knowlson's Complete Farrier," and believing from the plain practical style in which it is written, that it will prove of great value to every reader who keeps a horse, or has charge of that noble animal, we shall publish the *whole* of it in successive numbers of the *Agriculturist*. It will be completed by the end of the volume without occupying an undue share of our space. The index will be added, and our subscribers will thus have a valuable book in addition to the one they have bargained for.

Of all the things that the Creator has made for the use of Man, the Horse is the most serviceable. It is also the most tractable, if broken when young; but if not, it becomes restive and stubborn. No creature is worse used among the brutish part of mankind.

There are only three kinds of these useful creatures, viz. the *Horse*, the *Ass*, and the *Zebra*; but by crossing the breeds, many different sorts are produced. You may raise a cross breed from a horse, with an ass, but you can go no further. We cannot learn with certainty from history from where horses came at first, put it is very likely from Asia; although the extensive plains of Africa abound with them, and they run wild in many other parts of the world, where the natives know no other use of them than to eat their flesh.

In more civilized countries the horse becomes more tractable, and then, and not till then, its proper value appears. Our own country may challenge all nations for a good breed of horses, proper for all uses. We have them from eight to eighteen hands high; some as heavy as any in the world, and some very small; some calculated for swiftness, and some for drudgery; and some which are kept for show, and are of little use: but that is the fault of the owner, and not of the horse.

Many of these useful creatures are slaughtered by sinful men, and many are ill treated through that abominable and soul-destroying evil—*drunkenness*; and these poor animals which are so useful to man, are hungered, whipt, and ill treated many other ways. A horse is agreeable for its beauty, as well as valuable for its usefulness; but neither of these things prevents wicked men from using him ill. But it is not my intention to give you a history of the horse in this little treatise, but to inform you how to cure it when out of health.

HOW TO CHOOSE A HORSE.

In my time I have bought and sold hundreds of horses, as well as had thousands under my care when unwell, but still I am at a loss how to give my readers proper directions *how to choose one*; for among all the difficulties attending the common affairs of life, there is not perhaps a greater than that of choosing a good horse; nor will this appear strange when we consider the number of niceties attending this animal, with regard to its shape and manner of going, which are so numerous that it would fill a volume to describe them. Indeed, the best judges are obliged to content themselves with guessing at some things, unless a sufficient trial be allowed.

The Eyes are the first things to attend to, and should be well examined, as the best judges are often deceived in them. *Clearness of the Eyes* is a sure indication of their goodness; but this is not not all that should be attended to: the eyelids, eyebrows, and all the other parts must be considered; for many horses whose eyes appear clear and brilliant go blind at seven or eight years old. Therefore be careful to observe whether the parts between the eyelids and the eyebrows are free from bunches, and whether the parts round the under eyelids be full, or swelled; for these are indications that the eyes will not last. When the

eyes are remarkably flat, or sunk within their orbits, it is a bad sign; also when they look dead and lifeless. The *Iris*, or circle that surrounds the sight of the eye, should be distinct, and of a pale variegated cinnamon colour, for this is the sign of a good eye.

When the horse is first led out of a dark stable into a strong light, be sure to observe whether he wrinkles his brow, and looks upwards to receive more light; for that shews his eyes to be bad.—But if you observe that the dimensions of the *pupil* are large, and that they contract upon his coming into a strong light, it is almost an infallible sign that his eyes are good.

Sometimes what are called *Haws* grow on the corner of the eye, and cause the horse to go blind. You may take them out, and although it will disfigure the eye, yet it will be but a little worse.

In the next place examine the *Teeth*, as you would not wish to purchase an old horse, nor a very young one for service. A horse has six teeth above and six below, in the fore-mouth, which are called the *Cutting-Teeth*. At two years and a half old it changes two on the top and two on the bottom, which are called the *Nippers;* at three years and a half it changes two others, called the *Separaters;* at four and a half it changes the *Nook Teeth;* and at five years old has a full mouth; when the *Tusks*, commonly called the *Bridle-Fangs*, rise.

Horse-dealers have a trick of knocking out the nook teeth at three years and a half, to make the horse appear five years old when only four; but they cannot raise the tusks. At six years old the *Nook Teeth* are a little hollow, and at seven there is a black mark, like the end of a ripe bean. Afterwards you will observe the flesh to shrink from the teeth, which grow long and yellow.

Horse-dealers have also a method which they call *Bishoping a horse's mouth;* that is filing the tusks shorter, rounding them at the ends, taking a little out of the nook teeth, so as to make them rather hollow, and then burning them with a hot iron. I was hired by an Anthony Johnson, of Wincolmlee, Hull, as farrier to a number of horses that were going to the city of Moscow, in Russia, for sale, and we had a little grey stoned horse, called *Peatum*, that was seventeen years old, the mouth of which I bishoped, and he passed for six years old, and was the first horse sold, and for £500 English money! I only mention this as a caution to horse buyers.

The *Feet* should next be regarded; for a horse with bad feet is like a house with a weak foundation, and will do little service. The feet should be smooth and rough, of a middle size, without wrinkles, and neither too hard and brittle, nor too soft; the *Heels* should be firm and not spongy and rotten; the *Frogs* horny and dry; and the *Soles* somewhat hollow, like the inside of a dish or bowl. Such feet will never disappoint your expectations, and such only should be chosen.

Particular regard should be had to the *Shoulders;* they should not be too much loaded, for a horse with heavy shoulders can never move well; and on the other hand, one that has very thin shoulders, and a narrow chest, though he may move briskly so long as he is sound, yet he is generally weak, and easily lamed in the shoulders; a medium should therefore be chosen.

Be careful to observe the creature's *Motions*,—that the *shoulders*, *knees*, and *pasterns* all act together, and have but one spring of motion, for in that case alone can they be said to move well.

The *Limbs* should be free from * *Splents* and † *Windgalls*. The *Knees* should be straight and not bending, or what is called a calf's knee: the *Back-sinews* strong and well braced: the *Pastern Joints* clean, and free from swellings of all kinds; and the *Hocks* lean and dry, and free from ‡ *Spavins*, § *Corbs* and *Flatulent Tumors*.

The *Body* or *Carcass*, should neither be too small nor too large. The *Back* shought be straight or have only a moderate sinking below the Withers: for when the back of a horse is low, or higher behind than before, it is both very ugly and a sign of weakness. The back should also be of a proper length. The *Ribs* should be large, the *Flanks* smooth and full, and the *Hind-parts* or *uppermost Haunches*, not higher than the shoulders. When the horse trots before you, observe if his haunches cover his fore-knees. A horse with a short hind-quarter does not look well.

The next thing to be regarded in a horse is his *Wind*, which may be easily judged of by the motion of his flanks. A broken-winded horse always pinches in his flanks, with a very slow motion, and drops them suddenly, which may be easily perceived. Many horses breathe thick that are broken-winded; indeed, any horse will in foggy weather, or if foul fed, without sufficient exercise; but if a horse has been in good keeping and had proper exercise, and yet has these symptoms, there is some defect, either natural or accidental; such as a narrow chest, or some cold that has affected his lungs.

There are other particulars that should be observed in choosing a horse. If his *Head* be large and fleshy, and his *Neck* thick and gross, he will always go heavy on the hand, and therefore such should never be chosen. A horse that has his *Hocks* very wide, seldom moves well, and one that has them too near will chafe and cut his legs by crossing them. *Fleshy-legged* horses are generally subject to the Grease, and other infirmities of that kind, and therefore should not be chosen.

* There are four kinds of Splents, viz., the Bone Splent, the Blood Splent, the Osselet, and the Horn Splent.

† Windgalls are soft Tumors, seated on either sides of the Fetlock Joint.

‡ There are two kinds of Spavins, viz., The Blood Spavin which lies in the joint of the hind leg, something like a Windgall, going quite through the joint, and is then called a Thorough Pin; and the Bone Spavin which lies just below the joint, on the inside, and is called by dealers a Dry Knot, or Jack.

§ A Corb lies on the back side of the hind leg, near the lower part of the joint.

The *Temper* of a horse should be particularly attended to; because if his temper be good, it greatly augments his value, and if bad, it exposes him to many accidents. It is difficult to discover the temper of a horse without a proper trial, which should always be obtained, if possible. *Fear* is an impediment which greatly lessens the value of a horse; for a fearful horse endangers both himself and his rider. Almost every day affords us melancholy instances of persons being hurt or killed by fearful horses; and many horses are utterly spoiled by accidents that happen from their fearfulness. A fearful horse may be known at first sight by his starting, crouching, and creeping.

A *hot* and *fretful* horse is also to be avoided, but the buyer should be careful to distinguish between a hot, fretful horse, and one that is eager and craving. The former begins to fret the moment he is out of the stable, and continues in that humour till he has quite fatigued himself; and the latter only endeavours to be foremost in the field, and is truly valuable; he has those qualities that resemble prudence and courage; the other those that resemble intemperate heat and rashness.

When dealers have had a horse sometime in their stables, they exercise him with a whip two or three times a day; so that when a Chapman goes to look at him, they have only to stir their hand with the whip in it, and it is hard to say whether the horse be lame or not, it being so fearful of a drubbing, that a good judge may be deceived.

A horse that goes with his fore-feet low is very apt to stumble; and there are some that go so near the ground that they stumble most on even road; and the dealers, to remedy this, put heavy shoes on their feet, for the heavier a horse's shoes are the higher he will lift his feet. Care also should be taken that the horse does not cut one leg with the other. A horse that goes near the ground will cut the low side of his fetlock joint, but one that goes high cuts below the knee, which is called the *speedy cut*. A horse that lifts his feet high generally trots fast, but is not the easiest for the rider. Some horses cut with the spurn of the foot, and some with the heel; but this you may soon perceive by their standing; for if a horse points the front of his foot inward, he cuts with the spurn, and if outward with the heel.

These few instructions may be of use in purchasing horses; but I advise every one to get some experimental knowledge of them before he trusts to his own judgment, for the dealers have so many arts to hide the defects of their horses, that the best judges are often deceived.

A COLD.

This is such a common disease, that many people look upon it with indifferecce; but *there are few disorders incident to horses, which do not more or less derive their origin from a Cold.* But, as only those who are used to horses can tell when they have got this disease, it will be necessary to describe the nature of a cold, and the usual symptoms that attend it.

Causes of Colds. These are various; but the most usual are, riding the horse till he is hot, and then suffering him to stand still, exposed to the cold air; removing him from a hot stable to a cold one: (if the horse have been high fed, and clothed, the cold contracted in this manner often proves very violent; and this is the reason why horses often catch a severe cold on their first coming out of the dealer's hands:) neglecting to rub him properly down, and to rub the sweat carefully off when he comes in from a journey; and I have known grevious disorders brought on by removing horses into a new stable before the walls and plastering were dry. Workmen are often in fault for not leaving air-holes above; as when a horse comes into a new stable, and gathers heat, it will cause the walls and plastering to sweat very much, especially if there are no air-holes left. Many a horse has lost his eyes, and some their lives, by being put into new stables before they were dry.

Many farmers and tradesmen get too much drink when they go to market, and set off for home, riding like madmen, and call at some public-house on the road to get more of the soul and body destroying evil, leaving their horses to stand sweating at the door, where it is no wonder they get cold. Waggoners, carters, and coal carriers, are also often guilty of this abominable practice.

Symptoms. When a horse has caught cold, a cough will follow, and he will be heavy and dull in proportion to the severity of the disease: his eyes will be watery; the kernels about his ears, and under his jaws, will swell, and a thin mucous gleet will run from his nose. If the cold be violent, the horse will be feverish; his flanks will heave, and he will refuse his food. The owners should be very careful to observe these last symptoms, because when they appear and are attended with a slimy mouth, cold ears and feet, moist eyes and a great inward soreness, there is danger of a fever, and generally of a malignant kind. But when the horse coughs strongly, and snorts after it, eats scalded bran, and drinks warm water, is not much off his stomach, moves briskly in his stall, dungs and stales freely, and without pain, his skin feels kindly, and his coat does not stare, there is no danger, nor any occasion for medicine. You should, however, bleed him, keep him warm, give him some feeds of scalded bran, and let him drink warm water.

The Cure. If the horse feel hot, and refuse his meat, it will be necessary to bleed him plentifully, and give the following drink:—

2 oz. Juice of Liquorice.
2 do. Salt of Tartar.
2 drachms of Saffron.
2 oz. of Honey.

Cut the juice small, dissolve all together in hot water, and give it nearly cold. This drink may

be repeated as occasion requires, but let twenty-four hours elapse first. Or give:

4 oz. of Anniseeds
2 do. Liquorice Root.
1 do. Gum Scammony.
1 do. Nitre.

Boil these together in three pints of water for ten or twelve minutes; strain the liquor through a cloth, and add two ounces of honey to it when you give it to the horse.

It is a common practice with Farriers to give a drench of hot nauseous powders, in a quantity of ale; but this is a very bad practice, for it heats the blood, and consequently increases the fever; and at the same time the powders pall the horse's stomach by their loathsomeness. The following ball, commonly called the Cordial Ball, is one of the best yet found out for coughs or colds either in horse or man, and is much preferable to the horse-balls commonly sold at the druggists' shops, and too often made of bad ingredients. Be careful to get your drugs good, for this ball is of great worth in many disorders, both in racers, hunters, and road horses. Few things will remove a cough or a cold, or clear a horse's wind, sooner or better. Mr. Markham recommended one something like it, which is called Markham's Ball; but you may depend on it, that mine much exceeds it in value.

Take of Anniseeds Powder, Fenugreek, Liquorice Powder, Flour of Brimstone, each 4 oz.; Grains of Paradise, in fine Powder, 5 oz.; 4 ounces of Liquorice, cut small, and dissolved in White Wine; 1 oz. of Saffron, pounded small; 1 oz. of Oil of Anniseeds; 8 oz. of Olive Oil, and 8 oz. of Honey.

Bray them all well together till they come into paste, and if they should be too dry, add a little more olive oil and honey. The dose is about two ounces, and may be given three or four times a day, if needful. These balls consisting of warm, opening ingredients, are of great use; and given in small quantities, about the size of a pullet's egg, will encourage a free perspiration; but in case of a Fever they should be given with the greatest caution.

It will be of great use to put scalding hot bran into the manger, that the horse may hold his head over it, and receive the steam up his nostrils, which will cause a running from them, and relieve him very much. I have known asarabacca, dried and rubbed to powder, and blown up the nostrils, to cause a discharge; for when a horse has caught a violent cold, he is often troubled with a pain in his head, which a good discharge at the nose is very likely to cure. For the same purpose the horse should be warmly cloathed, especially about the head, neck and throat; as it has a tendency to promote a running at the nostrils.

By this simple method, with proper care, hot mashes, and warm water, most colds may be cured; and as soon as the horse begins to feed heartily, and snorts after coughing, an hour's exercise every day will greatly hasten the cure. If the legs swell, and the horse be full of flesh, rowels are necessary.

A COUGH, AND ASTHMA.

Among all the diseases to which this noble creature is subject, done has given more perplexity to Farriers than a settled Cough; indeed it too often defies all the attempts of art, and the horse frequently becomes *Asthmatical* or *Broken-winded.*

CAUSES. The causes are various. Sometimes it is owing to colds imperfectly cured; sometimes to pleurésies, or malignant fevers, which have left a taint upon the lungs or other vessels; sometimes to small eruptions in the glands, which cause the lungs to be much larger than they ought to be, and a quantity of phlegm, and mucilaginous juices to stuff up the glands and branches of the windpipe; and sometimes fleshy substances engendered in the blood vessels; for all these things hinder a free respiration, and excite a cough.

It is of the utmost importance to distinguish one kind of cough from another, and this makes the disorder so hard to cure; for it cannot be cured till the seat of the complaint be found out.

If the cough be of long standing attended with a loss of appetite, wasting of flesh and weakness, it denotes a Consumption: and that the lungs are full of knotty, hard substances, called tubercles. When the cough proceeds from phlegm and mucilaginous metter stuffed up the vessels of the lungs, the flanks have a sudden, quick motion, the horse breathes thick, but not with his nostrils distended like one that is broken winded; his cough is sometimes moist, and sometimes dry and husky; before he coughs he wheezes, and sometimes throws out of his nose or mouth large pieces of white phlegm, especially after drinking, or when he begins or ends his exercise; and this discharge generally gives great relief.

CURE. If the horse be full of flesh, take from him a moderate quantity of blood. The next day give him scalded bran, and in the evening the following ball:—

1 oz. of Powder of Anniseeds.
1 do. Liquorice Powder.
1 drachm of Colomel, eight drachms to an ounce.

Work them into a ball with Barbadoes tar. Give this ball the last thing at night, and be careful to keep the horse out of wet, and from cold water the next day. On the next morning give the following purge:—

1 oz. of Barbadoes Aloes.
1 do, Castile Soap.
½ do. Powdered Ginger.
1 drachm Oil of Anniseeds.

Bray them together in a mortar, with a little syrup of buckthorn to make them into a ball, which is to be given in the morning; and plenty of warm water, and walking exercise, till it be wrought off. (It will not work the first day.) In three days after give six ounces of the Cordial ball in a little warm ale, fasting, and to fast two hours after. Repeat the Calomel ball, physic, and cordial ball six days after, in the same manner as before. Let the horse's hay be sweet, and his manger-meat

scalded bran, with a spoonful of honey in each feed :—let him have walking exercise in the open air, but be careful of wet and of cold water.

When this course has been pursued two or three times, give two or three ounces of the cordial ball every morning. The above method will remove most Coughs, but if it fail try the following:

1 oz. of Gum Ammoniacum, in fine powder.
½ do. Gum Galbanum, in powder.
2 drachms of Saffron, brayed.
2 do Assafœtida, in powder.

Work them up with honey, or Barbadoes tar into one ball; roll it in liquorice powder, and give it fasting, and to fast two hours after. This ball must be given every morning, for six or seven times, before it can have a fair trial; but if the horse be not a good one it will be thought too expensive. In the cure of this disease, the diet should be very moderate, the usual quantity of hay should be abridged, and sprinkled with water, and the usual allowance of corn and water divided into several portions; for with these regulations in diet, the disease will soon be cured; and where it is incurable, the horse will be so far recovered as to be able to do a great deal of work.

It way not be improper here to add that some young horses are subject to coughs when cutting their teeth, and their eyes are also affected from the same cause. In these cases always bleed, and if the cough be obstinate, repeat it, and give warm mashes, which are often sufficient alone to remove the complaint.

When young horses have a cough that is caused by worms, as is often the case, such medicines must be given as are proper to destroy those vermin, of which I shall inform you in the chapter on worms.

FLAX VS. COTTON.

A subject of the greatest consequence to Ireland is now engaging the attention of Agriculturists and Manufacturers in the old country. This subject is no less than the practicability of spinning Flax and Cotton in conjunction. Several experiments have been made and have resulted in the most gladdening success.—These experiments were made under circumstances to test the difficulties of the process in their most complicated forms. The quantity of cotton used was so small and the result so perfectly satisfactory as to not only give promise of a large consumption of the mixed material, but to hold out the certainty of the cotton being shortly dispensed with altogether, and the flax spun alone. The quantity of the former used in the experiments was so very small as to prove that the latter can be spun into yarn of as fine a thread. By the process already tried—the mixture of the two materials—a decisive saving of 2d. sterling in the pound was effected. This is an important item as effecting the price of all cotton goods. When we consider that the soil and climate of Ireland are peculiarly favorable to the groth of Flax, such a discovery as this cannot be viewed but as of the vastest importance to her prosperity as a nation. We feel glad to notice any subject which may tend to the advancement of that seemingly doomed country, more particularly when it will directly enlist the industrial and native skill of her people.

The following article on this subject we cut from the London *Morning Chronicle.* It should be read by every farmer in this country, for the growth of such an important article as Flax has been sadly overlooked in Canada :—

"We have great pleasure in recording some further progress which has been made in the experiments connected with the preparation of flax cotton and flax wool. We yesterday had an opportunity of inspecting some samples of mule yarn, spun upon cotton machinery, composed entirely of unbleached flax fibre.—It may be remembered that in our earliest notice of the subject we stated that some thread had been spun wholly from flax fibre. The thread so produced was, however, spun from the bleached fibre, which it was supposed would possess greater facilities for spinning, in consequence of its more minute division, than that which existed in the unbleached fibre. The result of the experiments, however, proves that the flax fibre may be spun as easily in the unbleached as in its bleached state. The samples of yarn submitted to us were of a strong and useful chraacter, apparently equal to about 16's cotton, and, considering the nature of the machinery employed, might be considered very creditable to the spinner. So far, therefore, as the experiments connected with the spinning of the fibre are concerned, they may be considered as having now been brought to a successful conclusion. The flax had been spun into yarn in the proportion of one half, two-thirds, three-forths, and four-fifth flax, and the remaining portions cotton.

Yarns have also been spun from the pure flax fibre, in the bleached and in the unbleached state upon the existing machinery, and with the most complete success; thus demonstrating to the letter the accuracy of our statements made some weeks since, that it was practicable to spin flax, either alone or in combination with cotton, upon the existing machinery.

Some samples were also yesterday shown to us of prepared flax suitable for spinning in combination with wool, with the cloth woven from this mixed material. The cloth from this mixture has been woven as wide as 54 inches; and in order to test the "felting" properties required in this very extensive branch of our manufacture. The cloth exhibited to us was piece-dyed the wool taking black, and the flax a light slate colour; it was of excellent quality, and no doubt exceedingly durable, while it is evident that, woven in the proportion of half flax and half wool, the price at which it could be sold would be considerably less than that of cloth formed entirely from wool.

In connection, however, with the yarns produced from different proportions of flax and cotton, it became a matter of considerable importance to ascertain how far yarns composed of two materials originally differing so widely in their character could be made capable of being dyed in a uniform colour. To persons ignorant of the complete change in the character of the flax fibre brought about by the process of M. Claussen it would appear imposible to attain this uniformity of colour; and it was no doubt owing this ignorance of the mode of treating the material that Professor Calvert in his lecture recently delivered before the Society of Arts on the bleaching of flax and cotton, ventured to assert that it would be impossible ever to bring them to act in harmony together, or the one to be used as a substitute for the other.

In order to insure a perfect uniformity of colour, in these mixed yarns, it is of course necessary to treat the flax in such a manner as that it will retain precisely the same rich and opaque colour as would be imparted

to cotton, and, from the difference in the structure of the fibres of the two plants, it is obvious that the same materials would produce different shades of colour upon the two substances. The mode of treating the flax fibre pursued by M. Claussen, which we stated a few days since, that of destroying its cylindrical character, and changing it into a cotton-like substance, completely obviates this difficulty and renders perfectly easy that which would otherwise have been impracticable viz, the imparting an equal and uniform colour to yarns formed from a mixture of the two substances.—As a practical proof of this, several bundles of yarn spun from equal proportions of flax and cotton, and dyed in various colours, have been submitted to us, after the most minute inspection has not enabled us to detect any of the differences of shade or colour which might have been expected in yarns composed of two such different materials. As a proof of the perfect command which M. Claussen possesses over the materials with which he deals, we may state that some samples were also shown to us of yarns spun from the pure flax fibre, prepared to mix with silk, and dyed in colours possessing all the brilliancy and lustre peculiar to those of that material.

Whatever improvements may yet be made in the preparation of these materials and in the various details required to ensure perfection, nothing now remains to be done, so far as the principle of adapting flax to cotton or wool machinery and of dying the yarns or fabric is concerned, and we sincerely trust that our agriculturists will not neglect the immense market which these discoveries are calculated to open up for any amount of flax which they may produce. Flax may be grown upon almost any soil; all the objections that are previously entertained against its growth, on the ground either of its exhaustive character or the difficulty of its preparation for market, are now removed; and it has been proved to demonstration, by Mr. Warnes and numerous other agriculturists in England and Ireland, that it is a highly remunerative crop.

With respect to this demand for the article we need only say that one thousand tons of cotton are required daily as food for the factories of Manchester, and if but one-half of that enormous demand can be supplied by flax, the produce of 2,000 acres daily, or 700,000 annually, will be required, while not less than 500,000 acres are wanted to furnish the quantity now consumed in our linen manufactories and which with but a trifling exception, is derived from foreign countries. So far as the manufactories are concerned the question now asked is not, "will the experiment succeed?" but, "whence shall we be able to get the necessary supply of flax?" Several of the leading manufacturers of Manchester and its neighborhood have already expressed their determination to sow large portions of their land and with flax. This conduct on their part is well calculated to inspire confidence in our agriculturists, and should induce them to endeavour to obtain possession of the new market thus called into existence, before it shall have been occupied by the foreign producer. A supply of the raw material must be obtained by the manufacturer; his mill must be kept at work! and unless some steps be immediately taken in the matter, our farmers will by their supineness, have given to foreign countries the same monopoly in the supply of flax for the cotton and woollen, as they now possess in the linen manufactures of the country.

FLAX COTTON.

We have seen a specimen of the cotton produced from flax, and it exactly resembles the ordinary cotton only that it appears to be much more lustrous.

Linen as a Substitute for Cotton.—The Maysville, Ky., *Post Boy*, referring to the recent interest which has been awakened in the public mind by the experiment now making with a view to substitute flax for cotton, says:—"We have a sample before us of "flax cotton" which is as white and soft, and fine as any cotton, but of a richer and more glossy silk-like appearance, and which evidently can be spun into very fine yarns as cheaply as cotton. Now this material can be produced from unrotted flax for seven cents per pound! And we know that unrotted flax can be procured so that the lint shall stand at one and a half cents a pound, leaving a pretty wide margin for the preparation to bring the material to seven cents. It is known that there is no object in growing cotton for a less sum, so that it is far from being an impossibility that linen may yet be produced as cheap as cotton.

We understand that the inventor, Dr. Leavett, and his associates, are making their arrangements to bring out their inventions promptly and vigorously; that they throw them wide open to the public, and afford every facility possible for the establishment of linen factories, by contracting to furnish the machinery as expeditiously as possible, at fair prices, and with such guaranties as the safety of the manufacturers will require. They propose to put out different parts of this work in different machine shops throughout the country, east or west, near where the factories are to be built, as is frequently done with cotton factories, so that as little delay as possible may be occasioned in getting factories into operation.

We also understand that they are now in negotiation with several companies who are preparing to go into the business.—*Cin. Gazette.*

Strong Vitality of some Varieties of Weed-Seeds.—A correspondent of the Al. Cultivator says:—

The garden which I occupy had been neglected before it came under my care in the autumn of 1842.—There was in it a small triangular plat, of less than two square rods, surrounded by gooseberries. This I found covered with the yellow dock. It has now been under cultivation for eight years, and has occasionally been deeply spaded. I think it fully within the limits of truth to say that I have destroyed upon it three crops of young plants each year; *and the end is not yet.*—The fact obviously is, that each year of cultivation has thrown up seeds that had previously lain too deep east and removed from the air to germinate. All seeds have not this strong vitality. Corn and beans deeply planted will speedily rot, but potatoes and peas will grow from any depth at which they ever become buried by the deepest cultivation.

Let farmers beware how they neglect a crop of weeds under the impression that a little extra cultivation, the next year, will make up the difference. It may be so with some varieties, but with many it will not, as they will discover, to their expense and sorrow, in long subsequent years. Query? Who has experimented on this subject, and will give the public a table exhibiting the different vitality of weed-seeds.

Effects of Railroads on Agricultural Products.—The effects of railroads in modifying the agriculture of different sections, is illustrated by the example of Massachusetts. Since 1840, about 800 miles of railroads have been laid in that state. According to the returns of the assessors, it appears that the number of horses in the state, has increased from 60,030 in 1840, to 74,060 in 1850. This is remarkable, especially when we consider the fact that the railroads have

displaced many lines of stages on which numerous horses were employed; and it shows also that the increase of business occasioned by the railroads, gives employment to an increased number of horses. From the same returns we learn that cattle have increased from 278,737 in 1840, to 299,600 in 1850, while in the same period, sheep have declined from 343,390 to 179,537. The produce of wheat has declined from 101,178 bushels to 28,487, while Indian corn has increased from 1,775,073 bushels in 1840, to 2,295,856 bushels in 1850.

An Agricultural Convention composed of delegates from the various county agricultural societies in Massachusetts, was held at the State-House in Boston on the 20th of March last, for the purpose of taking measures in regard to the improvement of agriculture. Hon. M. P. Wilder was chosen president, and addressed the convention in relation to the object for which it had been called. Several other addresses were made, and a series of resolutions reported and adopted, one of which recommended the establishment of a Central Board of Agriculture to be composed of delegates from the various agricultural societies of the commonwealth —the Board to meet semiannually or oftener, and to recommend to the societies measures for action; and to consider all subjects pertaining to the interests of agriculture. Another resolution related to the establishment of Agricultural Schools in the state, in which it was held to be the duty of the government to aid; and the last resolution suggested to the legislature the propriety of reserving the proceeds of the sales of the public lands belonging to the State—"from and after the period when the Common School Fund shall have reached the maximum fixed by the act of 1834—for purposes of education and charity, with a view to extending that aid and encouragement to a system of agricultural education."—*Al. Cultivator.*

Improvement in Drill-machines.—An improvement in drill-machines has been made in England, by which a sufficient quantity of water may be deposited with the seed to ensure its germination, even in the driest time. In many instances this may be of much importances. It often happens that sowing must be deferred, after all preparations are completed, or else the seed must be put in the ground with more or less risk of its failure. Sometimes there is barely moisture enough to swell the seed, without fully developing the root and blade, and if it shrinks under these circumstances, it will seldom start again. By wetting the soil, as is said to be done by this drill, so as to bring up the plants quickly, all this risk may be avoided, the crop may be sown without any delay, and may frequently be forwarded considerably from what it could have been if sowing had been delayed till the earth was moistened by rain. For root-crops especially, this will be of much advanrage. The same machine also drops ashes, bone-dust, guano and other fine manure, in the drill with the seed.

The strong men usually give some allowance even to the petulance of fashion, for that affinity they find in it. Napoleon, child of the revolution, destroyer of the old noblesse, never ceased to court the Faubourg St. Germain; doubtless with the feeling that fashion is a homage to men of his stamp.

True charity consists in the performance of every duty of life, from the love of justice with judgment.

Horticulture.

HORTICULTURAL MISCELLANIES.

[*From the Cultivator.*]

Black Knot on the Plum.—Benjamin Hodge, of Buffalo, N. Y., who has raised and sold trees for the last thirty years, says he has never had this malady among his plum trees till the present season, and that in the instance cited, it was introduced from the East. One case was with two trees which came from Boston; in another instance twenty trees out of some hundreds received from the eastern part of the State were effected; and a few trees grown from scions received from Massachusetts were attacked in the same way.

The Victoria Regia.—According to Spruce's voyage up the Amazon, this remarkable plant, growing in water, has leaves four feet in diameter, which increase to eight feet during the rainy season. It is even asserted that some have attained twelve feet in diameter. So great is their size and so perfect their symmetry, that when turned up they suggest some strange fabric of cast iron just taken from the furnace; its color, and the enormous ribs with which it is strongly barred increasing the similarity. At the exhibition of the London Horticultural Society last summer, a flower with two leaves of this plant were exhibited, the latter measuring each *five feet ten inches in diameter.*

Early Second Crop of Grapes.—The Gardiner's Chronicle states that at a late summer's exhibition of the London Horticultural Society, which closed on the 13th of 7 mo. (July,) "there was a bunch of Hamburg grapes, *perfectly colored* from Mr. Wilmot of Isleworth, which formed part of a crop ripe upon *vines that were loaded with ripe fruit last February!*"

Old Forest Trees.—We once counted the rings of a large tulip tree at the newly cut stump, in Western New York, which we made out ninety years old at the discovery of America by Columbus. This tree was 124 feet high. The pines at the west in the Pacific coast, which attain such enormous dimensions, have in some instances numbered nine hundred rings. Such a tree, consequently, would have served as a bean-pole in the time of Genis Khan, and was a tall towering forest tree of two hundred years during the conquest of Tamerlane.

Large Orchards.—Dr. Kennicott states in the Horticulturist, that eighteen miles above Peoria, Ill., Isaac Underhill has five hundred acres in orchard. He has in the last two years planted out 12,000 grafted apple trees, and 7,000 peach trees.

Stir the Soil.—The greatest horticulturist, almost, of the present day, says:—

If I had a '*call*' to preach a sermon on gardening, I should take this for my text: STIR THE SOIL.

HARD TO SUIT ALL.—At the American Congress of fruit growers, in 1848, a fruit committee of nine persons prepared a select list of fruit worthy of general cultivation. Although many hundred sorts of the pear have born fruit in this country, all perhaps pronounced 'excellent' by the nurserymen who sold them, yet there were only *two* that the fruit committee could *unanimously* agree upon to recommend, namely the SECKEL and BARTLET.

DEEP SOIL AND DEEP ROOTS.—A. J. Downing says: "I have seen the roots of strawberries extend five feet down into a rich soil; and those plants bore a crop of fruit five times as large, and twice as handsome and good, as the common product of the soil one foot deep."

CROCUS.—There are upwards of one hundred varieties of this vernal flower in cultivation, attended with universal success. They delight in rich soils, and may either be planted in beds or rows, at least two inches deep, and six inches from row to row. They seldom require removal; every three or four years will be sufficient. They can be purchased at seventy-five cents to two dollars per hundred, according to quality. When they are done blowing, the foilage should not be removed till perfectly decayed.

PRUNING.—It is said that the donkey first taught the art of pruning the vine; man being merely an imitator on seeing the effect of cropping the points of the young shoots. It is not always the greatest wisdom to originate, but to turn to good account whatever by thoughtful observation comes within our reach.

LUCK WITH TREES.—We have noticed that certain men always have much finer peaches and pears and plums than most of their neighbors, and are called *lucky*. Their luck consisted in the first place, in doing everything well—taking what their neighbors call foolish pains—leaving nothing unfinished; and in the second place, in taking good care of what they had; that is, giving their trees wide, deep and mellow cultivation, applying manure when necessary, and especially the liquid manure from the chamber and wash tub. Great pains taken, whether with fruit trees or with children, scarcely ever fail to produce good results.

PLANT SHADE TREES.

The subject of transplanting shade trees to ornament our yards and streets is one of general interest, and we hope the following remarks may be deemed seasonable, and serve to incite to action in the matter. In country and city, they add so much of health, beauty and convenience, that all who may, should seek to extend their benefits.

We do not now intend to say any thing of the kinds best adapted to the streets of villages, the door-yards or dwellings, or the road sides of the country, but there can be no great difficulty in getting any where those varieties which experience has proved to be the most durable, ornamental and useful. Judgment and taste should be exercised in this matter, as in all others. With those trees that put forth their leaves earliest should be mingled those that part with their foliage latest, so that we can see the first buddings of spring and the last verdure of autumn. The locust, maple, beech, oak, linden, willow, chestnut, and many others are all well fitted for this purpose, and may be safely used.

It is to be hoped that the residents of all our cities and villages, who have not already done so, will not allow the season to pass without at least making a commencement towards rendering more beautiful their streets and walks by setting out appropriate trees. The expense and labour attending this very desirable improvement are so trifling, and the benefits resulting from it so general, that all should engage with enthusiasm in the agreeable work. It has been truly said that there is nothing that makes home more attractive or that is more pleasing to the eye of the stranger, than the trees that decorate the door yard or the way side, and cast their cool and refreshing shade over the weary in the full tide of a midsummer sun. It is in such places that the traveller seeks rest, and at that hearth there must be peace, when beauty makes so pleasant the path that leads to it.

How much better is it to have finely shading trees along our walks to lure to their spreading branches those little warblers whose songs we all love so well to hear, than leave them without these cheap, but very useful ornaments. Let there be an abundance of shade trees—there is little danger of their being too many. No dwelling should be without them. The happy influence which a general improvement in this respect would have, will a thousand times repay all trouble it can cause or cost.

It would be well if each one would do this much for himself and village—to plant a tree and so take care of it that it shall grow and live. If the planter of it cannot always repose under its shadows, somebody else may, and who would not leave some cherished memorial behind a witness to the kindly emotions of a noble heart, showing that it was not wholly unmindful of the happiness and wants of others.—*N. Yorker.*

IRRIGATION OF GARDENS.

From repeated experiments we are induced to draw the conclusion, that next to manure the great prime mover in successful culture, there is nothing more important to vegetable growth in many cases, than irrigation. Practical gardeners, in countries far more moist than our own regard it as indispensable, and a large share of their success depends on copious waterings.

Some interesting instances, which have recently occurred may be worth stating. Two rows of raspberries stand on ground in every respect alike, except that one receives the drippings from a wood-house and the other does not. The watered row is fully four times as large in growth as the other. Again—the berries on the bushes of the Fastolph and Franconia raspberries were, at least twice as large when the soil was kept moistened, as afterwards when allowed to become

dry; a repetition of the watering again doubled their size. Again—a near neighbor, who cultivates strawberries for market, and who uses a water-cart for irrigating the rows, raised at the rate of one hundred and twenty bushels to the acre, on common good soil by this means; and he noticed that where the cart was left standing over night, so that the water gradually dripped from it, for some hours, upon a portion of the plants, the fruit had grown to double the size of the rest in twenty-four hours.

It should be observed that these advantages of a copious supply of water pertain chiefly to small or annual plants. The roots of fruit trees being larger and deeper, are to be supplied with moisture in a different way; that is, by a deep, rich, mellow soil, kept moist by cultivation, or by covering thickly with litter.—Water applied to the surface rarely descended so low as the roots, and only harden the soil to a crust.—*Alb. Cult.*

Irrigation of gardens should always be accompanied with some soluble material suited to the requirements of the plants. Rank feeders, like raspberries, will be benefited by a solution of night-soil, guano, &c., &c.—*Mercersburgh Weekly Journal.*

CHOOSING A WIFE.

An article lately appeared in the Religious Recorder on this subjest, and contains some peculiarly happy and just remarks, which we cannot forbear to transfer to our columns, for the good of all concerned. Excellent as is all the advice offered, we trust our fair readers will agree with us, that the best of the whole is the conclusion:

It is desirable to have an intelligent companion. I do not insist that your wife shall have what is understood by the term "an education." There are many who have that, who are about as intelligent as barbarians. But seek for one who is in the habit of exercising her intellect. Who reads, and reflects, and has an inquisitive mind.

It is desirable to have a wife who is domestic. A street spinster, a gadding news-carrier and busy-body, is the last woman who should have a husband. A young woman, who is more fond of gossip and company abroad, than of domestic duties, is not fit to be married.

Be not anxious to get a wife who has riches. If this runs much in your mind, I shall be sorry for the woman who has the misfortune to become your wife. If you make this a paramount consideration, be not surprised if you find yourself yoked with a woman who has not many personal qualifications that are to be desired.

When you have obtained a good wife, see that she shall be equally secure of having obtained a good husband.

THE MEMORY OF THE DEAD.—It is an exquisite and beautiful thing in our nature, that when the heart is touched and softened by some tranquil happiness or affectionate feeling, the memory of the dead comes over it most powerfully and irresistibly. It would almost seem as though our better thoughts and sympathies were charms, in virtue of which the soul is enabled to hold some vague and mysterious intercourse with the spirit of those whom we dearly loved in life. Alas! how often and how long may those patient angels hover above us, watching for the spell which is so seldom uttered and so soon forgotten!—*Dickens.*

TO CORRESPONDENTS.—R. S., London—Your communication has been received, and we hope to attend to your enquiries in our next.

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,

Near the Toronto Necropolis, East of Parliament Street

N.B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

AGRICULTURAL SEEDS.

JUST received and for sale by the Subscribers.

Blood Red Mangle Wurtzel,
Yellow Turnip,
Spring Vetches,
Superior Sugar Beet, equal to Mangle Wurtzel for feeding cattle,
Turnip Beet,
White Belgium Field Carrot,
Purple Top Swede Turnip,
Skirvings do do,
Laings do do,
Yellow Aberdeen do,
White Globe do,
do Flat do,
Early Stone do,

—ALSO—

A general assortment of Fresh English Garden and Flower Seeds.

ONION SEED.

A few Barrels of FINE LARGE RED ONION seed, for sale by

LYMAN BROTHERS, & Co.

Toronto, April 1st, 1851.

FLAX SEED.

100 BUSHELS FLAX SEED of a superior quality and cleaned expressly for agricultural purposes.

LYMAN BROTHERS, & Co.

CANARY SEED.

25 BARRELS superior English Canary Seed.

LYMAN BOTHERS, & Co.

St. Lawrence Buildings,

Toronto, 1st May, 1851. Toronto.

DOMESTIC ANIMALS AT AUCTION.

THE postponed yearly sale of FULL BRED SHORT-HORNS and IMPROVED DIARY STOCK, consisting of about fifty head, will come off at my farm on Tuesday, June 24, 1851 at 12 o'clock, M. I shall sell all the improved Diary Stock which is composed of the finest Short-Horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which com posed the improved Short Horns.

I am now breeding the Short-Horns, Devons, and Ayrshires, each seperately and pure, which owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own county Society, [with the exception of last year, when I was not a competitor at either,] it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Diary Stock. Several of the Bulls will be of the most appropriate age for efficient service for the coming season. All cows and Heifers old enough, will be warranted in calf at the day of sale, by my imported Bull "the Lord Eryholme," or my celebrated Bull "Lamartine."

I own two through bred Devon Bulls; one the celebraied old Major, the other, one and a half years old imported by me from Devonshire. One of the above animals will be sold—which one, I have not as yet determined.

A full catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day,

I also have about 20 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to imported Buck "Babraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain Stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this . in case they prove not to be so, it shall be optional with the purchuser, on his *certificate of the fact*, either to receive from me $25 (say twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give $25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm at two weeks old.

Stock purchased to be sent a distance, will be delivered on ship-board or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should not be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivating of the soil, and to benefit the consuming country at large.

All communications through the Post please prepay, and I will prepay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next. Persons wishing to view the stock at any time will find my superintendant, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851 at Mount Fordham, Westchester County, eight miles from the City of New York, by Harlem Railroad.

April 2.—3t L. G. MORRIS.

POSTSCRIPT.—I decline selling any Stock by private sale, so as to offer the public all the animals I have to part with without having any previously selected from the herd and all animals offered will be positively sold.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his his farm 2¼ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirklearington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Bull Meteor, these are Bates's Bulls, and their reputation as stock getters are two well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 3 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy, near Albany, New York.

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

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All communications are expected to be pre-paid.

SEASONAL OPERATIONS AND SUGGESTIONS.

Before this sheet gets into the hands of our subscribers the most important operations of spring sowing will have been brought to a close. So far the season must be considered as backward—the temperature,—with an exception or two, for a few days,—has continued low, and vegetation accordingly has made but little progress. Fall wheat in some localities is looking well, and promises, at present, a fair crop; while in others, particularly along the frontier townships, much of it is absolutely killed, by the exposure to which it was subjected during the severe weather of winter. So great is this evil in some places, that from 30 to 40 per cent. of the wheat is estimated to have perished. The slightest covering of rough manure, straw, or any kind of light vegetable matter, applied before the severe weather commences, would tend to mitigate this mischief;—but unfortunately, few farmers can command a sufficiency of such materials, to the extent required.

We hope that our readers have already made the necessary preparations towards securing a sufficiency of food, for carrying their stock through the next winter, in a healthy and thriving condition. It is a great, sometimes even a fatal mistake, to depend upon hay and straw

alone; turnips, carrots, mangel wurtzel, and other roots, have now been found most valuable auxiliaries to the stock farmer; and both the soil and climate of Canada are generally well adapted to these useful productions. All that now remains to be done is to keep the ground free from weeds by frequent cultivation, both by the hand and horse-hoe; the latter implement should be regarded as absolutely indispensable to every good farmer. The frequent stirring of the soil during the period of growth produces an astounding effect on the progress of all kinds of plants cultivated in rows. Air and moisture are thereby allowed more fully to permeate the soil, and the roots of plants are enabled freely to extend themselves in search of food. The food itself too, is thus rendered more available for building up the structure of the plant, so far, at least, as inorganic substances are concerned, while the land is kept in a good preparatory condition for the next crop.

The breaking up of fallows should be proceeded with without delay. Whenever practicable autumn or early spring ploughing, for this purpose, is to be preferred. It is the heavy tenacious clays which most need this kind of preparation, and such soils when allowed to become dry and hard, before breaking up, are most difficult and expensive to manage; for this, as well as other reasons, we prefer a deep ploughing in the fall. Fallowing is no doubt practised to a much greater extent, than is either necessary or profitable; but we confess ourselves not among the number who think that it might be dispensed with altogether. Even in England, this is not found in practice to be the case, except on the lighter soils. Not only does a summer fallow, when thoroughly made, clear the land of weeds, which of itself is an object of primary importance; but it effects certain mechanical and chemical changes in the soil itself, that are favorable to the healthy growth of plants. Root crops, however, when properly cultivated in rows, preclude the necessity of naked fallows; but in this country, it is unfortunate that such crops do not generally come off in sufficient time, for sowing fall wheat. If we could cultivate the horse-bean as in the old country, winter wheat might immediately succeed, with great advantage. Taking into consideration, as we should do in all cases of this nature, our peculiarities of climate, market-value of produce, &c.; we are clearly of opinion that, in the long run, it is not the most profitable system of farming in Canada, to adopt a rapid succession of crops. Thoroughly fallowing once in six or seven years, taking off but two grain crops, and liberally seeding down for hay and pasture, the farmer will generally be able, with the ordinary manure made on the farm, if properly taken care of and applied, to keep his land "in heat" for an indefinite period. This he could most certainly do with the application, now and then, of a little lime in the form of a carbonate, sulphate or phosphate. The first should be thoroughly incorporated with the soil, when in a caustic state, by a deep cross ploughing, and the repeated use of the harrow or cultivator. It will frequently be found in some fields, that only patches of thistles of most luxuriant growth obtain; these portions should be ploughed as deeply as possible every fortnight, during the summer; and when this pest makes its appearance in pastures, it should be cut off, as much below the ground as practicable.

At this season *under-draining* such portions of the fallows as are wet, may be advantageously performed. This matter demands the special attention of the farmer, who should employ all practicable means to get rid of superfluous water; thus bringing those parts of his fields that are now swampy and unproductive, under profitable arable culture. A few well-made drains, judiciously disposed, will frequently effect an entire change in the productive capabilities of several acres. The expense will generally be repaid by the increase of the first or second crop, leaving for a bonus, the *permanent improvement of the soil.*

Every opportunity should now be seized for removing stones from fallow, and all other obstacles to clean and efficient cultivation. Too many farms, even in our oldest settled districts, are yet unnecessarily encumbered and disfigured by stumps and decaying logs, which the fire ought long ago to have converted into food for the crops. The neat and improving farmer will accomplish a certain portion of this kind of work every year, and will thus be constantly increasing the picturesque appearance and productiveness of his estate.

As the oppressive heat of summer approaches, those who set a proper value on comfort and health, will pay strict attention to the cleanliness of their premises. Cellars and root-houses should be thoroughly cleaned out, and the general application of white-wash is stongly to be recommended. All decomposing matter, whether of animal or vegetable origin, either in the solid or liquid state, should be removed to a distance from the dwelling-house, and carefully collected and preserved, for the purposes of manure. A frequent sprinkling of charcoal dust or gypsum, on the floor of stables or over manure heaps,—which latter ought to be protected by a covering of black muck or mould, from the action of the sun and rains,—would tend to fix those volatile or gaseous substances, which though injurious to animals are essential to the nutrition of plants. By systematic attention to these apparently little, but in reality, most important matters, the comfort and salubrity of the farm-house and premises may be increased, and the fertilizing power of the manure heap augmented many fold. Health and competence then are seen, in the case of the farmer, to be mutually dependent.

THE IMPROVED BREEDS OF CATTLE.

To the Editor of the Canadian Agriculturist.

May 20th, 1851.

Sir,

Having seen in your columns the other day a letter from Mr. Tye, of Wilmot, the well known breeder of North Devons, I cannot resist the temptation of adding a word or two on the same subject. The Durhams seem to be the fashionable breed of cattle, chiefly on account of their large and showy though rather course frame, and early maturity. In the point of early maturity they certainly bear away the palm, as they ripen for the butcher 6 months or a year before the Herefords and Devons, but the following extract from the last *Agricultural Gazette*, of the prices in Smithfield Market, shows the public opinion of the quality of their meat:—

"Best Scots, Herefords, &c., 3s. 6d. to 3s. 8d. per stone (8 lbs.); best short horns, 3s 4d. to 3s. 6d. per stone."

In addition to which the middle-horned red breeds, especially the North Devons, are proportionally heavier. For milking they do not seem equal either in quantity or quality, proportionally to the food they consume, and their size, to the North Devons, the Herefords seeming inferior to both as milkers. As working cattle, a subject of some importance, they are far surpassed by both the Herefords and Devons, the latter being the quickest, handiest, and most honest workers; and the Herefords, though slower, heavier and quite as true. Another great fault in the Durhams will be found in the report of the Agriculture of Yorkshire, by the *Times* commissioner, "One of the most experienced men in the district, himself an eminent breeder and first-rate judge, informed us that one season 34 of his high-priced and high-bred cows missed having calves, and so great are the risks attending this business, that it is every year narrowing itself into fewer hands." That well bred cattle are easier kept in proportion to their value, and give greater returns, I believe is a fact no one will be found to deny but; it is also a self-evident fact, that the same cattle will not suit all situations, and I am afraid that the universal use of short horns will in many places lead to great disappointment.

I remain, Sir,
Yours, &c.,
Agustis.

P. S.—As regards mere beauty, which in my opinion, is a thing not to be slighted, nothing can equal the exquisite and graceful symmetry of the North Devon. By the way, I think, Mr. Marks' suggestion of a Canadian Herd-book, for all improved breeds, a most excellent one, as such a thing would give a great security to a purchaser of cattle.

GEOLOGICAL SURVEY OF CANADA.

Blackfriars Mills, London, C. W.
8th April, 1851.

To the Editor of the Canadian Agriculturist.

Dear Sir,

Numbers of your subscribers in the London and Western Districts, have, up to this time, been anxiously expecting (through the medium of your useful columns, or some other source,) the report of our Canadian geologist, through this section of the Province, about two years ago. When at London, that gentleman visited one of our best farmers, Mr. Christopher Walker, in the 12th Concession, and also the flats of our beautiful river Thames, and took specimens of the soil, with a promise that we should be furnished with a statement of their several qualities and requisites in the spring following. That time has passed and another at hand, yet nothing has appeared to satisfy the curiosity excited. Do, if you please, in your next publication, as our agricultural instrument, find out something relative to the important question,—What this part of the country requires, especially the river flats, to realize better crops?

I am, Dear Sir,
Your very obedient servant,
Roger Smith.

P. S.—Our fall wheat looks admirable in this section of the country and around Goderich.
R. S.

[Anxious to meet the wishes of our subscribers in the London and Western Districts, as referred to by our correspondent, we subjoin from Mr. Logan's Geological Report for 1849–'50, such portions as bear upon the objects of the enquiry. It is to be regretted that these valuable reports are not better known in the remoter districts of the country. Some of our readers may not be aware of the fact, that T. S. Hunt, Esq., is the chemist and mineralogist to the Geological Survey, and consequently the analysis of soils falls within his department. In the fall of 1849, Mr. Hunt collected forty specimens of soils from different parts of Upper and Lower Canada, the results of such as he had been enabled to analyze are appended to the

before mentioned report, and the remainder we should suppose will appear in the next. Few of our readers have any conception of the time and attention required in making a correct and thorough analysis of a soil; several of the operations are of the most delicate nature, requiring the best modern apparatus, with the minutest attention and most advanced knowledge of the manipulation. Many analysis of soils that have been made and published, are next to useless, for any practical purpose; indeed, not a few of them, from the imperfect manner in which they have been performed, will positively mislead. From Mr. Hunt's well known industry and attainments as an analytical chemist, the public may place the utmost confidence in the accuracy of his results. The following is that portion of his report which relates to Upper Canada.]—Ed.

SOILS FROM CANADA WEST.

When at Brantford, I had occasion to examine an interesting tract of land upon the Grand River. It consists in its original state of fine open plains, somewhat elevated, and may be defined as extending from Galt down the river for about eighteen miles. These plains support a fine growth of oak remarkably free from underwood, and are known by the name of "oak openings." The soil is a sandy loam very uniform in its character, which at a depth generally of from two to six feet, is underlaid by a coarse gravel, thus affording a natural drainage. The crops of wheat obtained upon these lands are excellent, but wheat is seldom sown for two successive years; the fall grain is generally followed by a spring crop, and the field then sown down with grass or clover, and pastured for one or two years.

Potatoes and root crops, as beets and turnips, succeed equally well upon these plains, which under a careful system of rotation are very productive; but it may be remarked that they would never endure the systems of tillage which are practised upon the heavy clay lands of the valleys of the Richelieu and the Thames. Besides the ordinary manure of the farm-yard, gypsum, which is found in great abundance in this vicinity, is very advantageously employed as a manure, especially for clover.

Along the banks of the river, at a lower level than the oak openings, are fine alluvial *flats* of a rich heavy mould, covered in their natural state with a thick heavy growth, principally of elm, beech and maple. The soil of these flats is scarcely adapted to wheat, which grows too luxuriantly, and is apt to suffer from rust, but it produces abundantly all the other crops of the upland.

Of the specimens illustrating the composition of these soils, the analysis of two are subjoined, which were collected at Strathmore, the residence of Major Burroughs, near Brantford. No. 13 is from the oak plains, and is the loam from an untilled and recently cleared field, taken from under a sod at the depth of eight inches. No. 14 is the black loam from the flats, taken under similar circumstances. A large proportion of No. 13 is very finely divided and readily washes away, but still is not of such a nature as to give to the soil the character of a clay.

The gravel is partly quartzose and partly argillo-ferruginous, as if derived from some decomposing sedimentary rock.

It consists of

Sand	47.4	
Finer material	49.2	
Organic matter	2.4	
Water	1.0	
		100.0

100 parts of it gave

Alumina	2.090
Oxyd of Iron	2.520
Lime	.310
Magnesia	.456
Potash	.105
Soda	.060
Phosphoric Acid	.380
Sulphuric Acid	.008
Soluble Silica	.060

The black loam, No. 14 is slightly calcareous; it consists of

Sand	72.0	
Finer material	20.0	
Vegetable matter	6.5	
Water	1.5	
		100.0

100 parts of it gave

Alumina	.915
Oxyd of Iron	2.415
Lime (as carbonate and sulphate)	5.200
Magnesia (as carbonate in part)	3.460
Potash	.162
Soda	.190
Phosphoric Acid	.303
Sulphuric Acid (=.158 of gypsum)	.093
Soluble Silica	.225

The examination of an interesting series of specimens which I collected while in the vicinity of Chatham, Western District, is as yet unfinished. The rich alluvial flats of the valley of the Thames extend from the north branch of Bear Creek, on the north, to near Lake Erie on the south, constituting a large portion of the western peninsula. The land is quite level, and requires draining to make it fit for successful culture. The soil may be described as a rich black mould, which along the Thames is from six to ten inches deep, but near Bear Creek is said to be very much thicker.

This at the places where I examined it upon the banks of the Thames, rests upon a yellowish or grayish clay, often containing abundance of small shells, which by exposure to the air darkens and crumbles down into a mellow granular

soil. In some sections seen near to the village of Chatham, this clay was about four feet in thickness, and was underlaid by a more or less sandy loam, regularly stratified, while beneath at about ten feet from the surface, appeared a tenacious blue clay. The ordinary tillage rarely brings up the lighter colored subsoil, but a plan of deep ploughing has been lately adopted by some of the farmers with excellent results. The wheat sown upon the black mould grows too luxuriantly, and is disposed to rust, tendencies which are arrested by an admixture of the clay. There are fields near the river in the Township of Raleigh, which I was well assured had been cropped with wheat for thirty or forty years, without manuring, and with very little attention to crops or fallowing, and yet these still yield very fair returns. Upon the best conditioned lands thirty-eight to forty, and even forty-two bushels of wheat to the acre, are obtained in good seasons. Hemp has recently been tried with much success.

The newly cleared lands are frequently first sown with Indian corn, which grows luxuriantly, and preferring as it does a light open soil, succeeds perfectly well in the richest moulds. The crops of oats and barley are also very fine, potatoes succeed well, and mangel-wurtzel and carrots are beginning to be cultivated for the feeding of stock. The evil of rust is often severely felt upon the wheat crop; the fall sown grain however, suffers less from it than the spring wheat. Sifting lime over the field while the grain is yet in the milk is said to have been found useful in preventing this disease, and I was informed by a gentleman interested in agriculture, that a plan which has been tried in very rich soils is to sow a much larger portion than usual of grain to the acre. The result of this is, that the plant becomes checked in its otherwise luxuriant growth, and ripening more rapidly, escapes the rust. The yield is not what would be obtained in proper soils with much less grain, but it yields crops of wheat where other means have proved unsuccessful in the Townships of Zone, Dover and elsewhere, and is recorded rather as a fact of interest than an example for general adoption. Draining and subsoil ploughing, where the clay can be brought to the surface, will be found the remedies most efficacious.

Such is the fertility of the soils in this region that but little need has hitherto been felt of a system of rotation in crops; some however have begun to adopt it, and have commenced the cultivation of clover, which grows finely, especially with a dressing of plaster, which is used to some extent.

The natural growth of these lands is oak, elm, with black walnut and whitewood trees of enormous size; the black walnut timber is already becoming a considerable article of export. Fine groves of sugar-maple are also met with, from which large quantities of sugar are annually made.

I give here an analysis of a specimen of the black mould from the seventh lot of the first range of Raleigh. The mould here is eight or ten inches in thickness, and had been cleared of its wood, and used six or eight years for pasture; the specimen from a depth of six inches contained but a trace of white silicious sand.

No. 15. It consisted of—

Clay	83.4	
Vegetable matter	12.0	
Water	4.6	
		100.0

100 parts of it gave—

Alumina	2.620
Oxyd of Iron and a little Oxyd Manganese	5.660
Lime	1.500
Magnesia	1.060
Potash and Soda	.825
Phosphoric Acid	.400
Sulphuric Acid	.108
Soluble Silica	.290

The examination of the clay subsoil is yet to be made, as well as the determination of some points of interest with regard to No. 15.

Near to the mouth of the Thames, and skirting the borders of Lake St. Clair, is an extensive prairie which is supposed to cover about 30,000 acres. Commencing nearly behind Chatham, it forms a belt three or four miles wide, which keeps the south side of the Thames for about six miles; here it comes upon the river, and occupying both banks, extends down to the lake; stretching as far as the eye can reach in one vast plain, broken only here and there by *oases* of forest, like small islands, dotting it surface. These consist of a growth of soft maple, walnut and elm, with occasional willows, which are seen springing up here and there in little copses, with thorns. The plains are covered in some places with a coarse sedge, and in others with a stout jointed grass, which sometimes attains the height of three feet, and makes good hay pasturage for the half-wild poneys which feed in great numbers upon these prairies.

In spring time the greater portion of this region is overflowed with water from a few inches to two or three feet in depth. The whole of the country to the south from the ridge near Lake Erie, discharges its water upon this tract, and it is said that in the spring time a current is perceptible across the whole surface. In 1836–'37 nearly the whole prairie was covered throughout the year, a circumstance connected with the yet unexplained change in the levels of the upper lakes.

The soil is a black unctious mould from six to eighteen inches or more in depth, with a subsoil composed of blueish or whitish clay, which by exposure to the air readily disintegrates. It often contains shells and fragments of wood, and an intelligent man employed in ditching assured me that he had met with the end of a canoe at the depth of eight feet in the heavy clay. About 2,000 acres of the prairie are under cultivation in the Township of Raleigh, and from 6,000 to 7,000 more rise to a height of about twelve feet above the lake, and might readily be drained. Some

parts of the eastern extremity are at present rarely submerged, and present gentle undulations of gravelly loam, black with vegetable remains.

The cultivation of wheat does not succeed well upon the mould of the prairie; the heaving of the soil injures the fall sown, while the spring sown grain rarely escapes the rust. Where however, the mould is so thin that deep plowing can be made to bring up the clay, a good wheat soil may be obtained. Indian corn, oats and barley succeed and grow luxuriantly, as also many root crops. The last season, although the tillage of these lands is not generally the best, the first prizes for these products, offered by the County Agricultural Society, were gained by crops raised upon the reclaimed prairie.

The cultivation of grass has hitherto been much neglected, as the natural growth of the country serves for both hay and pasturage, but clover has been a few times tried and great crops obtained. One fault of the soil is its exceeding richness in vegetable matter; it is probable that a judicious application of quicklime would be found very useful. Specimens of the soil were taken from a recently drained portion in the seventeenth lot of the first range of Raleigh. The mould was here twelve inches deep; a specimen of it at the depth of six inches, No. 16, and one of the clay at twenty inches, were taken. The analysis of the mould is subjoined; it contains no sand, and consists of—

Clay	80.9
Vegetable matter	13.6
Water	5.5
	100.0

100 parts previously ignited, gave—

Alumina	4.340
Oxyd of Iron	7.090
Lime (in part as carbonate)	1.580
Magnesia	1.030
Potash	.855
Soda	.240
Phosphoric Acid	.320
Sulphuric Acid	.155
Soluble Silica	.380

An analysis of the soil before ignition, a determination of the condition of the organic portion, and an examination of the subsoil, are yet to be made.

I have not spoken of my examinations of the soils in the vicinity of Woodstock and Zorra, in the neighborhood of London and Lobo, of Hamilton, and of St. Catherines and Port Dalhousie, as the results are not yet completed, and must form part of a future Report.

I may however here introduce the analysis of two interesting calcareous clays from London and Niagara. That of London is met with at a depth of five to ten feet, and is seen cropping out upon the banks of the Thames, near the town; wells have been sunk in it thirty and forty feet. Mr. Hamilton of London, who had submitted it to a partial analysis, has found it extremely beneficial as a manure when applied to his garden. It has the texture of a fine clay and is mixed with limestone pebbles; during solution in hydrochloric acid it evolves a bituminous odor; it contains no sulphates.

No. 17. It consists of—

Clay insoluble acids	57.00
Carbonate of Lime	29.40
Carbonate of Magnesia	6.91
Phosphate of Lime*	.39
Oxyd of Iron and Alumina	4.40
Water, alkalies and loss	1.90
	100.00

A similar clay to that of London is found in like circumstances in Delaware and Mosa, and a specimen from Port Stanley was found to be similar in constitution. For those soils which are deficient in lime, it will be evidently extremely valuable, as it is in composition a rich marl.

The second is a clay taken at a depth of eight inches from an untilled field in the Township of Niagara, upon the ridge of land or escarpment here formed by the Niagara limestones. It contains three or four per cent. of silicious sand with mica, and some calcareous pebbles.

No. 18. Analysis gives for his composition—

Insoluble in icids	50.00
Carbonate of Lime	15.30
Carbonate of Magnesia	7.68
Oxyd of Iron, Alumina, Manganese, a trace	13.50
Alkalies	.51
Phosphoric Acid	.09
Moisture	4.70
	99.78

It contained besides a small amount of sulphuric acid, which was not determined.

I have refrained from speaking of the conclusions to be drawn from the preceding analysis, or the various theoretical deductions which might present themselves to the agricultural chemist, because sufficiently complete investigations have not yet been executed, to warrant me in generalizing. Some of the consequences are however so obvious, as to suggest themselves to every scientific agriculturist, and to the attention of such I commend these results, as the first fruits of my labors on the soils of Canada."

* The composition of the phosphate of lime here represented, is that of bone earth, of which thirteen parts correspond very exactly to six of anhydrous phosphoric acid.

(*Concluded in our next.*)

To the Editor of the Agriculturist.

SIR,—

As you seem anxious that farmers one and all should contribute to your valuable periodical, I hope you will excuse the liberty I have taken in addressing these few lines to you. I am led to make the following remarks by a conversation lately held with one of our most extensive city brewers; at the same time bearing in

mind the unpleasant recollection of a somewhat similar one with a wheat-buying miller, two years ago. The subject of conversation was the character of the Canadian farmer, as compared with the English farmer,—both gentlemen referred to being of the latter country.

The miller was complaining that a number of the bargains made with farmers for their grain by sample, proved to be tricky; they either cleaned up a portion for such purpose better than the crop, or selected the sample from the best portion of the grain, so that they were almost always taken in, when purchasing in that way. Now they say this would never do in England; nor should I think it would anywhere else. Another constant trick was, he said, to sell all their crop, say from one to five hundred bushels, at a stated price; which quantity they would augment, in case of reduction in price, from one to three hundred bushels, and diminish in the same proportion, if the market went up, selling the remainder to a fresh purchaser.

Now the other account was so much better that I at once felt we should earn a fairer character in the eyes of our fellow-creatures. The brewer said that he had contracted for some thousands of bushels of barley at, and under 2s. 3d. per bushel, and that although the price had been all the time a shilling above that agreed upon, in every instance the farmer had delivered his crop honorably.

I am quite sure it is not necessary for farmers in Canada to resort to such dishonorable actions, to obtain a comfortable living; honest, sober and industrious farmers can, and do make a good living. I am certain I could find 40 farmers in this country very comfortably off, that were old servants of my father or mine, and commenced their new-world life without five pounds.—Whenever they find that they are not getting on fast enough, or feel the least dissatisfied, let them look upon many of the companions of their youth, still in the old country, pining to leave the home of their birth, which cannot be accomplished from poverty, while they after a sojourn of ten or fifteen years in Canada, are the owners of a good farm, from 50 to 200 acres, with every comfort about them, and almost invariably looking back with satisfaction on the day when they left the land of their nativity. Then why resort to such dirty actions as the miller referred to? Why not try to build a *character* to be proud of, as well as a fortune? The former can be done without distressing toil and labour, and always yields a happy harvest; while the latter is sure to be mixed with many disappointments.

Your obedient servant, R. L. DENISON.
Toronto, May, 1850.

[Instances such as first stated by our correspondent are, we should hope, becoming less frequent as society advances, and men's intercourse with each other increases. The diffusion of sound knowledge among the people, and the elevation of their moral sentiments must be looked to as the only efficient antidote for the evils here complained of. Intelligence, guided by christian principles, is the sure basis of a nation's progress and happiness.]—EDITOR.

CABBAGES AS A FIELD CROP.

(For the Canadian Agriculturist.)

Last year I purchased a number of cabbage plants of the drumhead kind from a gardiner, and set them out in a field four feet apart each way; hoed them well through the season and in the fall, as soon as the grass began to fail, I fed them to my cows in the yard, at the rate of five cabbages per cow per day.

The largest cabbage weighed 34 lbs., and the average weight of each 20 lbs. The soil a rich damp vegetable one, with clay subsoil, originally a swamp.

Part of the cabbages were set out on the 10th June, and the remainder on the 20th June, and the latter were the finest. I prefer to buy my cabbages of some gardener, and pay a higher price to have my pick of the lot, as the largest are always the best, and a farmer, generally, has no time to attend to raising them in a garden or hot-bed, as they get choked with weeds and become small and sickly in consequence. Altho' planted 4 feet apart, they completely covered the ground at the time of heading. A few were sold at $1 per dozen heads.

There is, perhaps, no plant so useful to feed cows upon in the early part of winter as cabbage. Cows fed on them yield a large quantity of milk, and the butter made at that time will keep fresh and sweet a long time. Yet few attempt to grow cabbage, except in gardens for the table.

It is as easily cultivated in a field as corn or root crops, and any soil is suitable provided it be damp and rich. Five thousand cabbages can be grown upon one acre, which at 15 lbs. each will give 33 tons of solid food. They can be stored on the barn floor or in any out-building, as frost does not hurt them.

J. M.

Ancaster, May 22, 1851.

BIRDS' EGGS.

The composition of eggs affords much curious instruction. The body of the egg contains neither lime nor phosphoric acid, both of which substances are requisite for the bones of the young bird; these materials therefore are furnished by the shell, which becomes progressively thinner during the period of incubation, till the living embryo has appropriated a sufficient quantity for the formation of its bones. Part of the albumen combines with the shell for this purpose, and another portion forms feathers.

Fowls kept closely confined away from substances containing lime, will lay eggs without shells. Dr. Paris has shewn, that if the legs of hens be broken, they will lay their eggs without shells until the fracture is repaired; nature employing all the lime in circulation for the purpose of reuniting the bones;—a beautiful and beneficient contrivance. Eggs may be preserved by rubbing them over with butter or varnish, which by filling up the pores in the shell, cuts off the communication of the embryo with the external air. The embryo, however, is not killed. Reaumur covered eggs with spirit varnish, and found them capable of producing chickens after two years, when the varnish was carefully removed.

REPORT OF THE ROYAL AGRICULTURAL SOCIETY OF PRINCE EDWARD ISLAND: 1851.

We have been favored with a copy of the proceedings of this Society during the past year. The document commences with an allusion to the lamented death of His Excellency Sir Donald Campbell, whose knowledge of agriculture was both practical and extensive, and who had rendered essential aid to the Society. All kinds of crops,—with the exception of hay, had been abundant. The cultivation of Indian-corn was extending. The Committee had held 26 meetings during the year. A difficulty was felt in inducing the farmers to procure and read agricultural publications; and the propriety of issuing a monthly journal, under the auspices of the Society, was suggested; said journal to be distributed *gratis*, in all parts of the Island. The annual Fair and Cattle Show was held in Charlottetown;—the collection was small, but several fine animals were exhibited. Cattle-shows had likewise been commenced in King's and Prince's Counties, which with perseverance, hold out a fair promise of success. The Committee recommend that the sale of intoxicating drinks in booths erected on the premises, should be prohibited by the local authorities on these occasions.

The Society import annually a considerable quantity of seeds, comprising several kinds of grasses, turnips, carrots, parsnips, &c. Three or four depots, in different parts of the Island, have been established for the sale of the same; an arrangement that appears to have been very satisfactory and beneficial. Nine Ayrshire heifers, in calf, had been imported from Scotland during the year, at a cost of £258; they were sold, 3 in each county, realising a total of £136; thus leaving the Society £122 minus by this transaction. This, however, was considered the most expeditious mode of extending a fine breed of stock. A Galloway bull and a Durham heifer in calf had been ordered. There are some pure Galloway cows, and one or two pure Durham bulls in the vicinity of Charlettetown.

The culture of turnips is extending, and the yield increasing. From 20 to 30 tons per acre are commonly obtained after proper treatment.

"Judging from the appearance of the fields which produced the best crops, the undersigned are of opinion, that if the drills were nearer together than they are usually made, that is, not further apart than from 24 to 26 inches, and the plants thinned out to 12 or 14 inches apart in the drill, the crop would be much benefitted, as greater space would then be allowed for the extension of the leaves in every direction, giving thereby a more rapid growth as well as a better shape to the turnip; this applies more particularly to the variety of Swede called "Skirvings," which has a much heavier growth of top than any other in cultivation here. Considerable prejudice exists against this variety from their tendency to run up to *long necks*, which, however, would be materially checked if the plants were thinned out as above-mentioned. The largest crops, however, raised this year, *were of that kind*—the seed sown by Judge Peters imported by himself—that sown by Mr. Simpson and Mr. Wright imported by the Society. The greater quantity of top which this variety furnishes is

also of some moment, and the attention of farmers appears to have been given, in many instances, to a proper saving of them as an article of food for their stock. It may not be amiss to mention here, that they should always be carted from the field and fed either in the stable or barnyard, or laid in rows upon a grass field, which would be materially benefitted by the operation.

The variety called "*Lang's Purple Top*," partially sown this year by Mr. Peake, Mr. Pethick and others, from seed raised by Mr. Beer, has much better shaped roots, and is, perhaps, the best to cultivate when sale either for home market or exportation is intended.

The practice of applying the manure, intended for a turnip crop, at two different periods, appears to be advisable, and where the first dressing can be given in the fall, so much the better. This should be not less than from 30 to 40 loads ploughed in, and from 25 to 30 put in the drills immediately before sowing. The latter should consist of well fermented manure. The seed should be sown as soon after the drills are made as possible while the earth is fresh.

From 10th to 25th June appears to be the best time for sowing."

The following judicious observations have a wide application.

"Before concluding this Report, we would briefly allude to a few subjects to which the attention of our Farmers should be *particularly* directed:

Firstly: Fencing is becoming scarcer every year. This approaching difficulty should be met in time, by the planting of Hawthorn Hedges, which grow well here. The Spruce and Beech also, when transplanted young, make an excellent hedge. The Spruce hedges on the Farm of the Hon. G. R. Goodman, will turn any thing, and are well worthy of imitation.

Secondly: Endeavour to adopt a proper rotation of Crops, and at once abandon the practice of cutting repeated crops of Hay off the same land in succession, without top dressing.

Thirdly: Recollect that a Beast kept in a Warm Stable will thrive better, on less food, than one kept in a Cold one, on a larger allowance—therefore improve your stables and cattle houses in this respect.

Fourthly: Feed your cattle better—a cow well fed in winter, will give more milk next summer.

Fifthly: Feed all your Calves well the *first* winter, and give your Bull Calves a little grain, in addition, if you wish to improve your stock.

Sixthly: Arrange your Farm Yards so that the dung may fall into a pit, and cover it with a shed if you can, to protect it from the rain and snow; at all events, do not allow its juices to run away. Be diligent in making composts: lay every bog swamp, and road side under contribution for them. Save all bones, ashes, and soap suds, for your Turnips; and collect every thing that you can come at for Manure.

Seventhly: Sow Red and White Clover, and Timothy as liberally as you can afford, when you lay a field down; the more the better—and give up the foolish practice of leaving a field to seed itself."

ON THE RELATIONS OF SCIENCE TO PRACTICE IN AGRICULTURE.

[We take the following remarks from a paper in a recent number of the Scottish Journal of Agriculture, from the pen of Dr. Anderson, Chemist to the Highland Society, a gentleman of high scientific attainments, and successor to Professor Johnston. Seldom have we seen anything written on this subject, more truly in accordance with the cautious spirit of the inductive philosophy. Professor Johnston, himself, had experienced no little annoyance from the unreasonable conduct of some individuals who had fallen into the delusion, at one time very prevalent in England, among sanguine and half informed minds, that Chemistry was about to pour immediately forth a flood of light and prosperity on agriculture. When disappointment came a reaction, as was naturally to be expected, ensued; and there is now some ground for apprehension, that the services which Chemistry can render practical agriculture, when patiently and perseveringly performed, may be depreciated or neglected. We commend the observations of Professor Anderson, to the attention of the intelligent, practical farmer, as well as the man of science.]

The application of science to agriculture is a subject on which so much has been said and written, during the last few years, and which has occupied so much of the attention of the agricultural public, that it may seem almost superfluous to add to what has already been penned. It has always appeared to me, however, that there are still many points of great importance for the practical man to consider, which have either never been sufficiently prominently presented to his view, or which, from their being less striking, or perhaps less enticing, have been allowed to fall into the background, and have hence led to a cer-

tain amount of misapprehension in regard to the exact position of science and its relations to practice. Such misapprehensions it would be desirable under any circumstances to dispel; but now that the Highland and Agricultural Society has actively taken up the prosecution of agricultural chemistry, it is of primary importance that the farmer and the chemist should come to a distinct understanding with regard to the mutual bearings of scientific and practical agriculture—the manner in which they can be made to assist one another—and, what is of all others the most important point, how they can be made to co-operate, so as to establish on a firm basis the general principles of agricultural science, which must necessarily be the first step towards the developement of a scientific practice. Under these circumstances, I have thought that I might advantageously refer very shortly to some of these matters, and point out what we are in future to expect from the application of chemistry to agriculture, the more especially as it is not very difficult to perceive that the interest which attached to it has somewhat abated with the general public, though I believe it to be undiminished with our most active and intelligent practical men.

This very diminution in the interest attaching to chemical agriculture, I believe to be mainly founded on one of the most serious misapprehensions—serious alike to agriculture and to chemistry—with which we have to contend; and that is the erroneous and altogether extravagant expectations which some persons entertained, regarding the extent and rapidity of the influence which chemistry is likely to exert upon agriculture.—To hear them talk of it, one might almost imagine that chemistry, as by the wand of a magician, is at once to spread fertility over our barren moors, and raise abundant crops where nothing ever grew before; and that the chemist can, by a few simple experiments, determine with absolute precision the circumstances under which the farmer must go to work, so as to produce an abundant crop. It needs not to be mentioned that such views are the exception, not the rule; but, between this extreme case and those likely to be fulfilled, there are many expectations which, with less apparent extravagance, are equally beyond the powers of chemistry in its present imperfect state, and involve questions which, if they ever can be answered, must await the advance of pure science to a point much beyond that to which it has yet attained. Nor is it, perhaps, matter of much surprise that such expectations should have been entertained, as it must be admitted that the general public is not in a position to estimate correctly the extent of the benefits which it is likely to derive from the application of science to any art; and, unfortunately, in the present instance, it has been mislead by the far too laudatory terms in which the application of chemistry to agriculture were talked of some years ago. Hopes were then excited which, to those intimately acquainted with chemistry, it was very evident could not be sustained, but which the enthusiastic embraced at once; only, however, when they were disappointed, to abandon as worthless the whole science itself, along with the unobtrusive modicum of real progress, which was altogether lost sight of amidst the ruins of their lofty expectations. Even those who take a more cautious and sober view of the progress of agricultural chemistry are apt to be led into expectations greater than facts justify, by the extraordinary progress which the application of chemistry has effected in some other arts, such for instance, as the art of bleaching and the manufacture of soda, which chemistry, by one great stride, raised from a state of primitive rudeness in which they had existed almost from time immemorial to one at least of comparative perfection. Such facts may lead us at first sight to expect that the application of chemistry to agriculture should be followed by equally rapid results; but a little further consideration seems to point out a very material difference between such arts and the cultivation of the soil. In such a case as the manufacture of soda, for instance, and indeed in all those in which the application of science has produced the most marked results, the chemist has presented to him for solution a definite and circumscribed problem, involving the mutual relations of some three or four substances; and he is able to trace the changes which the coal, common salt, and lime employed, undergo, from the commencement of the process through each successive step, until the soda is obtained in the perfect state; but in the art of agriculture each question frequently involves, not one, but many problems, connected with the highest and most obstruse doctrines of the science, in which not merely chemical forces, but the far more recondite phenomena of life come into play, and in which the investigations of the chemist are carried on, and his conclusions tested under the influence of weather, climate, and many other perturbing causes.

The extreme complexity of the problems with which agricultural chemistry has to deal may be conceived from the fact, that most parts contain from twelve to fifteen substances, all essential to their existence, the relations of which must be investigated before definite views can be obtained regarding the changes which go on in the organism of the plant. These relations, moreover, are far more complicated than even the number of the elements alone would lead us to suppose: the single element of sulphur, for instance, which does not constitute more than two or three parts in the thousand of most plants, exists there in not less than three different forms of combination, in each of which it is as essential to the plant as those which form the great proportion of its bulk. Now, it must be sufficiently manifest, that questions involving elements of such complexity are not to be solved as rapidly or easily as the far simpler problems of mineral chemistry; and that not merely on account of their superior complexity alone, but because, in the one case, theoretical chemistry sets us far on our way towards the solution, while in the other there is still a great gap to be filled up, a whole mine of scientific facts to be worked out, before we are in the condition

to approach sufficiently near the comprehension of these more complicated phenomena. In fact, the latter are not questions of *pure* chemistry,but are intimately interwoven with vegetable physiology—so much so, indeed, that in many instances it is scarcely possible to decide to which of these two sciences they ought strictly to belong. And it is just herein that their great difficulty consists, for there is nothing more certain than that those questions which lie, so to speak, on the confines of two sciences, require for their successful investigation a high degree of developement of both the sciences on which they depend. Now, chemistry is still far from having attained all that developement of which it is capable, as the time during which it has been cultivated has not been sufficiently long to admit of much progress, except in special departments. Few of those who are not themselves chemists, are aware that the facts and doctrines of modern chemistry have been determined during little more than the last sixty years; and that, with few exceptions, all the laborious investigations of the older chemists, and, without exception, all their general doctrines were then swept away, to be replaced by the science as it now exists; while organic chemistry, with which agriculture is more intimately connected, has been successfully prosecuted for not more than half that period.

To expect any *rapid* advances, in the practical applications of agriculture, of chemistry in its present state, is manifestly unreasonable. The progress must necessarily be slow, in some instances almost imperceptible; and much must be done which at first sight the practical agriculturist may be inclined to consider altogether foreign to his object. Extended researches will frequently be requisite which do not directly lead to practical results—that is to say, which are not immediately convertible into an equivalent of current coin, but which are the foundation of such results, and form the starting point of perhaps a very different series of experiments, having an immediate bearing upon practice. It is of great importance that this should be distinctly understood and borne in mind, for it is by no means uncommon to suppose that nothing more is necessary than at once to convert scientific facts to practical purposes; while, so far from this being the case, the agricultural chemist has a two-fold duty to perform—he must both determine the scientific facts of agriculture, and eliminate from them the practical conclusions to which they lead. It may, perhaps, be said that the establishment of these facts falls within the province of the pure chemist, and that their practical application only ought to be the province of the agricultural chemist. But if this principle were to be acted upon, the progress of chemical agriculture would be slow indeed; for the investigations of the pure chemist lead him now, and are likely for a very long period to lead to him, in directions very remote from those most likely afford the materials which the agricultural chemist needs to work upon. The latter would, therefore, require to sit idly waiting till the former supplied him with facts, which his own exertions would have enabled him to ascertain. Nay, the agricultural chemist may even do a better service to agriculture, by persuing the investigation of those apparently theoretical subjects, than by directing himself to those which seem to have the most immediate practical bearings.

There is another point on which there has been a good deal of misunderstanding between the chemist and the agriculturist, which is intimately connected with the erroneous estimate of the extent and perfection of chemistry. It is not uncommonly supposed that the chemist is in the condition at once to solve, by the investigations of the laboratory, all such questions in practical agriculture as may happen to be submitted to him—that he can determine, when nothing else can, why certain methods of cultivation are successful, others unsuccessful. It is just possible that he may in some instances be able to do this, but far more frequently his researches enable him not to state positively what is or what is not the case, but rather to draw a probable conclusion—to form, in fact, a hypothesis, which is not in itself a truth, but which must be further tested by experiment in the field, whereby it may be either confirmed or entirely refuted. Now, very unfortunately, this hypothesis is often taken for a positive statement; and when it turns out to be erroneous, it is immediately held up as an instance of the fallacy of science by those who, not being themselves acquainted with the method of investigation by experiment, are unaware that all scientific facts are developed in such a manner. No one ever thinks of going fortuitously to work, when he proposes to determine a scientific fact. He first weighs all facts of a similar character, or having a bearing on the subject which he desires to elucidate, and then founds upon these a hypothesis, the truth or fallacy of which is to be tested by experiment. Now, without any explanation, it has frequently happened that such hypotheses have been handed over to the practical man, whose field experiments having refuted them, he has forthwith abandoned the science which seemed to him to give erroneous results, not knowing that these results were only in progress of being arrived at by those very experiments which he was engaged in performing. The very same processs has been employed in the applications of science to every other art; but the difference between them and agriculture is, that, with the former, the hypothesis is formed and the experiments executed by the same person, in agriculture the hypothesis must in many instances be handed over for experimental elucidation to the practical man. The many failures which are made in other arts remain unknown to all but those by whom they have been made, while in agriculture they become known to all and sundry; and by them it is not understood that, these results are negative, they still serve to bring us all the nearer to the truth.

And this leads me to observe, that the true manner in which chemical agriculture is to be advanced, is not merely by the exertions of the chemist, or the labours of the laboratory alone. It must be by the simultaneous efforts of science and of practice, each endeavouring to develope, with care, steadiness, and accuracy, the facts which fall within its province. Nor must each persue its own course irrespective of the other. They must go hand in hand, and, taking advantage of each other's experience, and avoiding all sort of antagonism, they must endeavour to co-operate for the elucidation of truth. The chemist and the practical man are, in fact, in the position to give each other most important assistance. The one may point out the conclusions to which his science, so far as it has gone, enables him to come; while the other may test these conclusions by experiment, or may be able, from his experience, at once to refute or conform them. But it will not do to imagine that there is here either a triumph or a defeat. It is rather to be looked upon as a fortunate state of matters, which admitting of the examination of our conclusions from two different points

of view, directs us with the greatest certainty in the path of truth.

* * * * * * * * *

It will be seen, for what I have mentioned, that we are now occupied with a large amount of work, the satisfactory completion of which will require a considerable time, but from which, I trust, we shall obtain results alike creditable to the Society and advantageous to agriculture. Of this I entertain little doubt; but I may be permitted to observe, that my chief fear for agricultural chemistry is, that the constant craving after immediate results on the part of the agricultural public, may lead to the publication of hurriedly and imperfectly performed investigations. The chemist knows well how desirable it is to weigh and repeatedly to examine all his results, and to proceed cautiously and slowly; while the agriculturist, though in his own operations he is content to cast his seed upon the ground and wait patiently for the harvest, is too apt to imagine that the tree of science bears fruit at all seasons, though in point of fact, the patient waiting for results is a most necessary element of scientific progress. If this error is avoided, I am convinced that good results will be obtained, and that all men will in time be convinced, that the slow and careful determination of scientific facts, is likely to be the most important assistants in the improvement of practical agriculture.

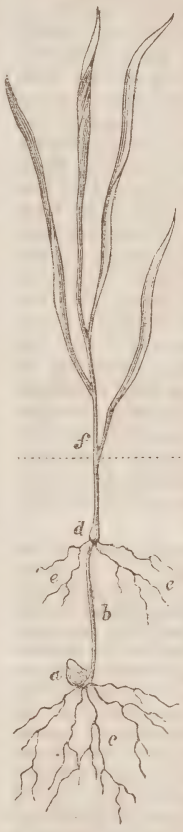
CULTIVATION OF WHEAT.

(From Stephens' Farmer's Guide.)

[Continued from page 109.]

Another circumstance which affects the relation between the seeds sown and the plants produced, is the depth to which the seed is buried in the ground. In ill-ploughed land, such as in fig. 4, seeds sown broad-cast falling between ill-assorted furrows, sink to the bottom of the furrow slice, where they are buried so deep as to become dormant or lose their vitality. Seeds are very differently affected by depth, some sorts germinating from a considerable depth, whilst others become dormant or die, if placed at a comparatively small distance below the surface of the ground. I have traced the stem of a plant of barley as far as 9 inches below the surface, from which depth it had penetrated the ground from the seed whence it sprung; while oats, buried 7 inches in the soil, will die. This accounts for the absence of oats, which have slipped down between the furrow slices of lea, where they perish. The risk of thus losing the seed sown on old lea, the furrow-slices of which are difficult to be laid close to each other in ploughing, induce me to recommend the partial harrowing of the surface of ploughed old lea before the seed is sown. The roots of barley strike downwards a considerable depth, which indicates that barley-seed should have a deep seed-furrow, as I recommended. But the roots of oats spread and keep near the surface, like those of the Scots fir and the beech, and hence oats thrive better upon shallow ground than barley.

Fig. 1.



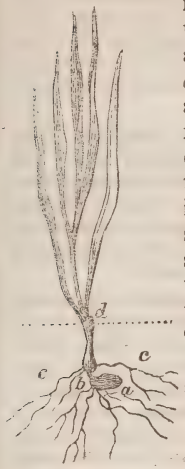
THE DOUBLE ROOTS OF DEEP SOWN WHEAT.

Wheat possesses a property in its roots common to both barley and oats. The seed will bear to be deep sown—not so deep as barley, but deeper than oats, and not deeper than 6 or 7 inches; and after the germ has become a stem, it puts out another set of roots about an inch below the surface. The deeper may be called the *seminal*, and the upper the *coronal* root of the wheat plant. Fig. 1 shows the arrangements of the roots under the surface, where *a* is the seed with its seminal roots *c*, and the germ *b* rising from it to the surface of the ground at *f*, above which the stem, with its leaves, are seen. About an inch below the surface at *d* are formed the coronal roots *e e*, the office of which is not only to maintain the plant, but to form the site from which the multiplication of the plants proceeds when it sends forth its tillers. At whatever depth the seed may have been sown, from 2 to 5 inches, the coronal roots are formed at one inch at *d*, the difference being the length of the connecting tube *a b*, according to the depth the seed had been deposited.

"As the increase and fructification of the plant depends upon the vigorous absorption of the coronal roots, it is no wonder that they should find themselves so near the surface where the soil is always the richest. I believe I do not err when I call this *vegetable instinct*. In the northern counties wheat is generally sown late. When the frost comes, the *coronal* roots, being young, are frequently chilled. This inconvenience may, however, be easily prevented, by sowing more early, and burying the seed deeper. The seminal roots being out of the reach of frost, will then be enabled to send up nourishment to the crown, by means of the pipe of communication."

Now the form which the plant assumes, when sown near the surface, is different from this, and is seen in fig. 2, where *a* is the seed with its se-

Fig 2.



SHALLOW SOWN WHEAT.

minal roots; *b* the pipe of communication between them and the coronal roots *c c*, which are a little beneath the surface *d*. The coronal root *c* being at a less distance from the surface than before, the pipe of communication is shortened to the smallest longitude. "Hence it is obvious," continues the same writer, "that wheat sown superficially must be exposed to the frost," while the life of the plant is placed in jeopardy "from the shortness of the pipe of communication," placing the seminal root within reach of the frost. The plant, in that situation, has no benefit from its double root. On the contrary, when the grain has been properly covered, the seminal and coronal roots are kept at a reasonable distance. The crown, being well-nourished during the winter, sends up numerous stalks in spring. On the tillering of the corn the goodness of the crop principally depends. A field of wheat dibbled, or sown in equidistant rows by the drill, always makes a better appearance than one sown with the harrow. In the one, the pipe of communication is regularly of the same length, but in the other it is irregular, being either too long or too short."

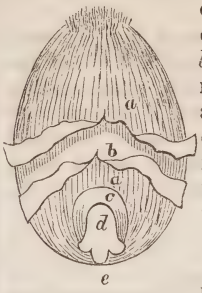
The conclusions which the foregoing statements warrant are evidently these:—That the wheat sown before winter should be as deeply covered with earth as to be beyond the reach of injurious frost, say 4 or 5 inches; that in spring the coronal roots will set out from the established plants abundance of tillers or stools; that wheat sown in spring should be lightly covered, little exceeding one inch; that the tillers or stools will be few; that therefore the autumn wheat ought always to be dibbled or drilled to make the pipes of communication long, and of uniform length; that spring wheat may be sown broadcast; and that autumnal sown wheat should have less seed than that sown in spring.

ON THE GERMINATION OF SEEDS.

(From Stephens' Farmer's Guide.)

Fig. 1 represents a grain of wheat magnified, and so dissected as to show its component parts.

Fig. 1.

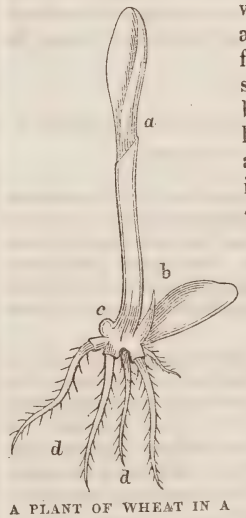


THE COMPONENT PARTS OF A GRAIN OF WHEAT.

It consists of two skins, an outer and an inner—*a a* the outer, and *b* the inner skin: *b* is also where the nutritive matters, called the starch and albumen, are situate, and these constitute the whole seed; *c* is the little scale or cotyledon through which the nutritive matter passes in the sweet state, when the grain is germinating, and by which it is rendered most fit for the nourishment of the little plant; *d* is the rudimentary plant, at the base of which 3 tubers may be seen, from which as many roots or stems, or both, will afterwards proceed; and *e* is the point where the nutritive matter, the little scale, and the rudimentary plant, are united. All these parts are essential to the growth of the seed, since, any one being absent by accident or design, the seed fails to spring.

The seeds of most species of plants possess such a structure as that only one stem can proceed from them; but in the grasses, and particularly in the cereal ones, which yield human food, a remarkable departure from this structure is observed. In them the embryo plant is usually thickened towards its base, and is so organised that, instead of one stem, 3 or 4 usually spring from one grain; and, in some cases, the number of stems is so great as almost to exceed belief. The peculiarity mentioned may be observed at *c*, fig. 2, which is the rudimentary plant, having 3 projections in the lower part, while in other kinds of seed there would have only been one; and from each of these three projections a rootlet or a stem, *d* or *b* or both, proceed when the grain is placed in the soil.

Fig. 2.



A PLANT OF WHEAT IN A STATE OF GERMINATION.

Fig. 2 represents such a grain in a state of germination, one shoot *a* having left the sheath, another *b* is just evolved, and a third *c* remains unevolved; and *d d* are the rootlets. It is this peculiarity of structure which compensates, in some degree, for the great loss sustained from

the destruction of seed, on sowing the cereal crops.

The force of the vegetation of a single seed is as great as to raise a weight of 200 lb., as has been proved by its splitting hollow balls, in the manner the Florentine academicians measured the expansive force of freezing water. In 1847 a small fungus upheaved from its bed a large flag-stone in a foot pavement in one of the squares of Edinburgh.

DORKING FOWLS.

This breed which is now extensively distributed, is distinguished by having five claws; one sort is perfectly white, and another of a partridge colour. These were long peculiar to Dorking, an ancient and beautiful little town in the South of England. Columelia, a Roman writer on agriculture, in the first century, describes fowls of this kind, so that it may reasonably be supposed the breed was originally introduced to England, like many other useful things, by the Romans. Blumenbach classes fowls with five or six toes among monsters with superfluous parts.

The very small breed of fowls, called "*Bantams*," are said to have been first introduced into England from Bantum, in the Isle of Java, in the year 1683.

"KNOWLSON'S COMPLETE FARRIER."

THE CHOLIC, OR GRIPES.

This disorder is little understood by common Farriers, and has for a long time been a secret to many, so that many a horse has been lost in it that might have been saved. The same medicines have generally been given to horses in the Cholic as in the dry Gripes, when there is much difference in the disorders.

The Cholic proceeds from various causes, therefore the method of cure varies; for otherwise the medicine intended to cure it may increase it, and perhaps render it fatal. We shall therefore, divide this disorder into three different species, and endeavour to give such plain directions for managing each, as cannot fail to prove very beneficial. The three species are these:—

1. The Flatulent or Windy Cholic.
2. The Bilious or Inflammatory Cholic.
3. The Dry Gripes.

THE FLATULENT OR WINDY CHOLIC.

Sypmtoms.—The horse is very restless, lying down and starting up again. He strikes his belly with his hind feet, and refuses his meat. When the pain is violent, he has convulsive twitches; his eyes are turned up, and his limbs stretched out, as if dying; and his ears and feet alternately cold; he falls into profuse sweats, and then into cold damps; often tries to stale, and turns his head frequently to his flanks; he then falls down, rolls about, and often turns upon his back. The last symptom proceeds from a stoppage of urine, which generally attends this species of cholic, and may be increased by a load of dung pressing on the neck of the bladder.

Causes—This disease often proceeds from catching cold by drinking cold water when hot, and the perspirable matter is by that means thrown upon the bowels, which causes them to distend violently, and sometimes brings out an inflammation in the small intestines, when the body begins to swell, and the cure is despaired of.

Cure.—The first thing to be done is to empty the straight gut with a small hand, dipped in oil. This frequently gives room for the wind, before confined in the bowels, to discharge itself; and, by taking off the weight that pressed upon the neck of the bladder, the suppression of urine is removed, upon which the horse immediately stales and becomes much easier. If the horse be young and full of blood, it will be proper to take a sufficient quantity of blood from the neck.

When these purgative operations have been performed, the following may be given, as it seldom fails to give relief.

4 oz. of Tincture of Senna, or Daffy's Elixir.
6 drams of Tincture of Opium.
1 dram of Oil of Juniper.
8 oz. of Juniper Berries, bruised.

Put one quart of boiling water on the juniper berries, let them stand a few minutes, strain it off, put all together, and give them to the horse.

If he does not find relief soon after taking this dose, both by staling and breaking wind, it is doubtful whether he will receive any benefit from it; so you must prepare the following clyster for him as soon as you can. Take—

Camomile Flowers, 4 ounces; Aniseeds, Fennel, and Coriander, 2 ounces of each. Boil them in 1 quart of water, and add 2 oz. of Castile Soap, cut small, while the water is hot, that the soap may dissolve.—Give it blood-warm.

During the fit the horse may be walked about, or trotted a little, but should by no means be harrassed, or driven about till he is jaded. If no better, give the following:—

2 drams of Camphor.
1 dram of Pellitory of Spain.
2 oz. of Ginger Powder.
3 gills of Holland Gin.

If the horse sweat much at times, and then falls into cold sweats, give four ounces of mithridate, in three gills of Holland gin, and repeat the clyster. If the disorder continue three or four hours, give one ounce of tincture of opium, in three gills of Holland gin. When the horse begins to recover he will lie quiet, without starting and trembling; and if he continue in this quiet state an hour, you may conclude that the danger is over. Dress him down well, and give him a small quantity of warm water, if he will drink it; bed him down well, cover him to keep him warm and then leave him to get a little rest. You must

consider that the disorder has left a soreness on him, both within and without; therefore, make him a little gruel, with a pint of red wine in it; and if any skin be knocked off about his eyes, or his huck-bones, rub it with the bottle recommended for bruises.

Sometimes the Cholic is received into the stomach, and does not act so violently, nor cause the horse's pains to be so strong. You may best judge of this by his motions:—he will draw his four feet together, lay him himself down, stretch out his feet and head, throw his head back, and often put his nose to his chest: after standing a little, he will lie down again as before. When the Cholic is easier, he will lie for an hour or more together, with his feet stretched out and his head thrown back, or with his nose upon his ribs. This is caused by bad meat, or bad water, or both: sometimes by drinking hard water when hot, or by a change from soft grit water to lime-stone or iron water, or by the break of a storm.—I have had five or six horses under my care in this disorder in one day, at the break of a frost, by drinking ice, or snow water. Give the following, which is almost a certain cure in two hours.

1 oz. of Spirits of Sweet Nitre.
1 do. of Spirits of Nitre.
1 do. of Tincture of Opium.
1 do. of Sweet Oil.

All to be given together in a gill of warm ale. Bed the horse well down, and leave him that he may get a little sleep, after which he will get up, and fall to his meat. This is one of the best medicines that has yet been found out. It has saved hundreds of horses, and will save hundreds more, if rightly applied.

THE BILIOUS OR INFLAMMATORY CHOLIC.

Symptoms.—This kind of Cholic, besides most of the symptoms of the former, is attended with a fever, great heat, panting, and dryness of the mouth. The horse also generally parts with a little loose dung, and a little scalding hot water; which, when it appears blackish, or reddish, indicates an approaching mortification.

Cure.—Take three ounces of Senna, and one ounce of Salt of Tartar; infuse them in one quart of boiling water nearly an hour; then strain it off, and add two ounces of Lenitive Electuary, and four ounces of Glauber's Salt. Mix them when hot, or they will not dissolve.

If the disorder be not removed by the above medicine, but, on the contrary, the fever and inflammation continue to increase, attended with a discharge of flesh colored matter, the event will probably be fatal; and the only medicine likely to prevent it, is a strong decoction of jesuit's bark, a pint of which may be given every three hours, mixed with a gill of red port wine. Or, if these cannot be got easily, give four ounces of tincture of rhubarb in three gills of red port wine. Also give a clyster every two hours, made of two new laid eggs, well broken, and two ounces of London or Venice treacle, in one quart of milk. Give it warm.

If the horse recover, it will be proper to give him a gentle purge or two in a week after.—Take

1 oz. Rubarb, in Powder.
½ do. Jalap, do.

Work them well up in a ball with syrup of buckthorn, and give it to the horse, with warm water to work it off.

THE DRY GRIPES.

Symptoms.—This disorder mostly proceeds from costiveness, and is discovered by the horse's frequent and fruitless attempts to dung, the blackness and hardness of the dung, the frequent motion of his tail, the high color of his urine, and his great uneasiness.

Cure.—The first thing to be done is to draw the dung out of the fundament, with a small hand as far as you can reach, and then give the following:—

4 oz. of Castor Oil.
4 do. Tincture of Senna.
½ do. Oil of Juniper.

Give them all together, and then the following clyster.

Boil a handful of Marshmallows and Camomile flowers in a quart of water, then strain it off, and add two ounces of Linseed Oil, or Pale Oil.

If the horse do no mend, repeat both the drink and the clyster. During this disorder the horse must not have any dry food; but boiled linseed, and scalded bran, with warm water to drink.—Gentle walking exercise is a great means to cause the physic to work; but be careful of cold.

From the account I have given of the different species of the Cholic, the reader will be abundantly convinced how necessary it is to be acquainted with each, that he may be able to give proper medicines, and to relieve the creatures excruciating pains. He should carefully avoid all hot, violent medicines, which always prove hurtful in every species of this disorder, and frequently fatal. Nor is it any wonder that horses treated in that manner should die, for such medicines stimulate the neck of the bladder, augment the heat of the blood, (before much to great,) and inflame the bowels, by which a mortification is brought on, and the horse is lost by the very means used for his recovery.

Sharp fits of the Gravel are sometimes taken for the Cholic; but should this happen, the drink recommended for the Cholic will also be proper for the Gravel.

WORMS AND BOTS.

Much has been said concerning worms in horses, and but little understood. I have often been astonished at grooms, farmers, and farriers, not having a better knowledge of them, for there are more horses killed by these nauseous vermin than by any thing else; and many are kept weekly and low in flesh by them.

I have opened horses that have been destroyed by them: some have had their stomach eaten through, and others have had their bowels so full

of them, as to have the inner coat eaten entirely off.

A horse in high keep is not so subject to these vermin as a poor one that is worked hard and badly fed.

Horses are subject to five sorts of worms, and perhaps many more, but I shall only describe to you three, which are the most common. The worst sort to destroy are long, round worms, resembling earth worms, but smaller at the tail; they have a seam all the length of their bodies, and are very hard: these are called *Round Worms.* The next are small worms about the size of a sewing needle; they have reddish, flat heads, having nine feet on each side, and are called *Ascarides:*—these are also very troublesome to horses. The third sort are short, thick worms, called *Bots:* their seat is mostly at the stomach; but when horses get any food that they are fond of, they will fill themselves so full, that they lose their hold, and come along with the dung to the fundament, and there stick to the end gut, partly out of the horse;—this happens mostly in spring when they get the juice of fresh grass.

It is well known that horses which have many worms can never thrive, or carry much flesh. If the breeding of those vermin were prevented, it would add much to the strength of the horse; and it might be done by giving him a decoction of bitter herbs, such as wormwood, in spring. It may be boiled, or steeped in hot water, and given two or three times a week. Or a decoction of wormwood, buckbean, gentian root, and camomile flowers, (of each a large handful, boiled in a sufficient quantity of water, and given as above,) will answer the end.

Symptoms.—The symptoms which indicate worms are various, as the animals are different, and seated in different parts of the body. When the Bots are seated in the straight gut, they are never dangerous, but are often thurst out with the dung. They generally come in the months of May and June, and scarcely ever continue in a horse above a fortnight. But when they breed in the stomach, they often cause convulsions, and even death. The Bots that breed in the stomach are about the size of a large maggot, composed of circular rings, and have little, sharp, prickly feet along the sides of their bellies, by means of which they fasten themselves to the part from whence they derive their nourishment, to prevent their being loosed from such adhesion before they come to maturity; and as they drain the coats of the stomach like leeches, it is no wonder that they often throw the horse into convulsions, which terminate in death, unless the cause be removed.—The violent agonies of the creature are the only indications of their existence. The other kinds of worms are more troublesome than dangerous, and are discovered by the following signs: there is a white fur on the end of the straight gut; the horse is lean and jaded; his coat is rough and staring and if you rub your hand backward on the hair, a white scurf will rise, as if he had been surfeited; and though he eats with a remarkable appetite, he does not thrive. He often strikes his hind feet against his belly, and is sometimes griped, but without the violent pains that attend the cholic, or stranguary; for he never rolls or tumbles, but is uneasy, often laying himself down quietly on his belly for a little while, and then rising and beginning to feed. But the surest sympton is when the horse voids the worms with his dung.

Cure.—Many medicines have been given to destroy these vermin, without knowledge or judgment, and even contrary to common reason. Some give coarse sugar for that purpose, but, in my opinion it will rather increase than destroy them; although a few will fill themselves so full as to loose their hold, and to come away with the dung. I advise all who have horses nearly eaten up with worms, not to give every foolish nostrum that people prescribe, but something that is likely to destroy to them. Take—

1 oz. of Socotrine Aloes.
1 dram of Calomel, 8 drams to an oz.
1 dram of Oil of Aniseed.
2 drams of Powdered Ginger.
½ oz. of Syrup of Buckthorn.

Beat all up together in a mortar till the aloes are well broken, and the whole is brought into a paste; which give in the morning, fasting, and to fast one hour after; also give warm water, and walking exercise till wrought off. (It will not work the first day.) Be careful that the horse be open in the body before you give the ball. In grass time you will have nothing more to do than to give, and to put the horse where he can get water. This dose is for a pretty strong horse, so you must add or diminish according to size. This dose must be repeated as need requires, but not within seven days. It will destroy most kinds of worms; but the hard round worms require different treatment, as they are the worst of any to get rid of. To destroy them give the following.

1 dram of Calomel, 8 drams to an oz.
6 drams of Jalap.
6 drams of Rhubarb, in powder.

Wrought into a paste with conserve of hips, and two days after give the above ball. Or the following:

1 dram of Calomel, 8 drams to an oz.
1 oz of dried Foxglove leaves, powdered.
½ oz. of Worm Seed, powdered.
1 oz. of Jalap, in powder.

To be given in three gills of malt liquor from the mash-tub. If the above be given every week for three weeks together, you may be sure that the most of the vermin will be expelled. If the medicines be given in the house, let the food be light and opening, and warm water for two days, with walking exercise.

I advise all who have horses troubled with worms, to give savin, dried and powdered, before they give the worm physic. If one ounce a day be given for a week before, in a mash of bran, it will be much better. The above ball is good for many disorders besides worms.

ADVANTAGES OF HEATING BY STEAM.

1. Steam is generally far more economical; in some cases saving half the quantity, and three-fourths of the cost of coals or other fuel. 2. Steam can be made to create any degree of temperature required. 3. It diffuses heat equally throughout an apartment; and the people in a room are not (as with fires) frozen on one side, whilst they are scorched on the other. 4. Steam, as diffused in metal pipes, creates neither dust, dirt, nor noxious odour. 5. Steam warms not merely the room into which it is conveyed, but all the adjoining rooms. 6. By causing the heated air to ascend, it thereby promotes the ventilation of a room, and the renewal of the air, by means of an orifice and pipe in the upper part of the room. In a word, the introduction of steam for generating and diffusing heat, would not only change the entire economy of houses, but promote comfort, health, cleanliness, and security, beyond all former anticipations of art or genius. Steam besides possesses many important advantages in preparing food for domestic purposes, and also for those of the farmer in the feeding of stock.

CLOTHING.

The reason why white hats and dresses are worn in summer may be thus stated. Dark colors absorb most heat; white, therefore, repels most heat, and is cooler wear. A white dress in winter is good, because it radiates or receives little heat. Polar animals have generally light furs. White horses are both less heated in the sun, and less chilled in winter, than those of darker hues. A flannel covering will keep a man warm in winter, and also keep ice from melting in summer, because the flannel has the property of preventing the passage of heat from the man, and to the ice. Loose clothing is found warmer than such as fits tight, because of the increased quantity of imperfectly conducting air thus confined around the body, resists the escape of animal heat. Linen is found disadvantageous for wearing next the skin, on account of its tendency to retain the matter of perspiration in its texture, and speedily becomes inbued with it; it gives an unpleasant sensation of cold, is very rapidly saturated with moisture, and conducts heat too rapidly. Woollens on the contrary allow perspiratory matter to escape more freely through their texture; and they have a greater power of preserving warmth under all circumstances, being bad conductors of heat. Several of the most beautiful and important laws of nature are involved in the rationale of the covering of man and animals.

WHAT PLANK ROADS DO FOR THE FARMER.—A writer, in speaking of the benefits of Plank Roads, observes that the farmer has what he never had before—a good road every day in the year—the same in all seasons, and can select for his travel, days when he cannot work on the farm, taking with greater ease, in half the time, three times what he formerly could carry. His woodlands acquire a value they never had before, from the ease with which his timber or wood can be taken to market. His farm increases in value from 10 to 50 per cent. The wear and tear to his horse, harness and vehicle, is reduced at least one-half, leaving a surplus in his pocket, after paying tolls, which would otherwise have been spent on repairs. His produce, of whatever kind, can be conveyed to market with one half the expense attended upon carrying it over the old road, from the increase in the quantity he is able to carry at a single load; and he can with the greater facility avail himself of all the advantages of churches, and neighborhood and friendly intercourse.

Farmers take one and a half solid cords of green wood to market, where formerly a half and three quarters of a solid cord was considered a load; 80 bushels of rye and 100 bushels of oats, when formerly they carried but 40 and 50 bushels. This is done at the rate of four miles an hour, whereas three miles, with a team, was considered rapid traveling, when the road was in tolerable order.—A manufacturer of Utica formerly transported from the railroad to his establishment, a distance of seven miles, ten bales of cotton per day, with two teams, which made each but one daily trip; but on the recently constructed plank road, one team perform the journey twice, delivering 15 bales per day. The average weight of a bale of cotton is 5 cwt.; therefore one team is now equal to the work of 75 cwt. while on the old road it was equal to 25 cwt.—and these loads are considered fair average burdens, without the energies of the team unfairly taxed.—*American Paper.*

BEAT THIS WHO CAN.—On Saturday week last a Sow belonging to Mr. John Stagg, of this town, produced at one litter eighteen young porkers.—The same Sow, in October last, littered 14, which, with the present number, make a total of 32 within the space of eight months.

STRANGE FREAK OF NATURE.—Mr. Aaron Yeoman of Murray, had a Cow which gave birth to a calf about three weeks since, which had two heads, two distinct necks, one body, one heart, and two galls; it died shortly after its birth.—*Belleville Intelligencer.*

TO KEEP EGGS.—I have seen a variety of different methods recommended for keeping eggs so they may be fresh and good through the winter; but on trial we seldom have them come out "as good as new."

About two years ago I thought I would pack some in charcoal. I pounded the charcoal and packed them in the same manner as recommended in oats, ashes, salt, &c. The result was they kept perfectly good to all appearance as new laid eggs. We have tried the charcoal two years with the same result.—*Maine Farmer.*

Horticulture.

THE TOMATO.

This plant or vegetable, sometimes called Love Apple, or Jerusalem Apple, which belongs to the same genus with the potato was first found in South America. The use of this food is said to have been derived from the Spaniards. It has been long used also by the French and Italians. The date of its introduction to this country is unknown. It is said that the tomato has been used in some parts of Illinois for more than fifty years. Its introduction to our tables, as a culinary vegetable, is of a recent date. Thirty years ago it was hardly known, but as an ornament to the flower garden, and for pickling. It is now cultivated in all parts of the country, and found either in a cooked or a raw state on most tables. In warm climates it is said they are more used than in northern, and have a more agreeable tast. It is now used in various parts of the country in soups and sauces, to which it imparts an agreeable and acid flavor; and is also stewed and dressed in various ways, very much admired, and many people consider it a great luxury. We ofren hear it said that a relish for this vegetable is an unacquired one scarcely any person liking it. It has, indeed, within a few years come into very general use, and is considered a particularly healthy article. A learned medical professor in the West pronounces the tomato a very wholesome food in various ways, and advises the daily use of it.—He says that it is very salutary in dyspepsia and indigestion, and is a good antidote to bilious disorders, to which persons are liable in going from a northern to a warmer climate. He recommends the use of it also in diarrhœa, and thinks it preferable to calomel. The tomato is a tender, herbaceous plant, of rank growth, but weak, fetid, and glutinous. The leaves resemble those of a potato, but the flowers are yellow, and arranged in large divided branches. The fruit is of a light yellow and a bright red color, pendulous and formed like the squash-shaped pepper. There are smaller varieties, one pear-shaped variety, and also red and yellow. These are eaten and relished by many from the hand. The red are best for cooking; the yellow for slicing like cucumbers, seasoned with pepper, salt and vinegar, and eaten raw. The seed should be sown in the early part of March, in a slight hot-bed, and the plants set out in the open ground in May. In private grounds it will be necessary to plant them near a fence, or to provide trelises for them to be trained to, in the same manner as for nasturtions; they will, however, do very well if planted out four feet distant from each other every way. But a nice way to keep the plant erect and the nice fruit from the ground, is to drive down four stakes, so as to make a square, sow to feet each way, around the stakes. These will keep the vines from falling, and expose the fruit nicely to the sun for ripening. They will bear till frost.

CURE FOR A CANCER—THE VIRTUES OF CRANBERRIES.

It has been ascertained that the application of raw cranberries, applied as a poultice, will cure this most inveterate disease. We know of one instance, a lady of our acquaintance, (says an exchange paper,) who had a cancer in her breast, which had become as large as a pullet's egg, and was an inch below the surface of the skin. In this present case it was an hereditary disease, and she regarded it as a death warrant. She was persuaded, however, to try the cranberries, and they effected a cure. It is now between two and three years since it disappeared, and she had no intimation of a return of the disease. The cranberries were mashed in a mortar, spread on a cloth and laid on, changing the poultice three times a day. In two or three days it became so sore it drew out pustules, that filled like the small-pox, and this process was renewed with the same effect until the whole was drawn away; the cancer becoming softened and decreasing in size at every application until it finally disappeared.

The virtues of cranberries are but imperfectly known they are cooling and useful in removing inflamation, and have been known to cure an obstinate sore throat. We have never known it tried, but are persuaded it might be useful in bronchitis. Hearing of this, brings to mind an anecdote, related to us in the Eastern region.

Some few years since, a bed of cranberries was discovered, within about six miles of Fort Fairfield. It was before the Fort was built, and a party were exploring the country, under the conduct of some Indian guides. The Indians set up a shout, and evinced their delight by such frantic gesticulations, that I was persuaded, says our informant, those children of nature knew of some virtue they possessed, that we were ignorant of, and yet so much was my attention absorbed by the business I was upon, that I never thought to ask them.

Cultivation of the Cranberry.—We have recently received numerous inquiries respecting the cultivation of the cranberry, and where the plants in quantities could be obtained. Many years ago, and before we ever heard of an attempt to grow this fruit upon upland, we made the experiment upon a very sandy, dry piece of ground, and the result was, we harvested annually an abundant crop of the most beautiful, deeply-colored cranberries we ever saw. Some years since, we introduced some of the same vines (of the common variety from the marsh) into what we considered a remarkable soil, near this city, but the experiment proved a total failure, which we attributed then to the intense heat of the summer's sun. As an experiment may not have been conclusive, and our failure attributable to some local cause, we give the following extract upon the subject from the Albany (N.Y.) Cultivator for the benefit of those who may wish to make further trial.—*Lou. Jour.*

CULTIVATION OF THE CRANBERRY.—We have received a letter from Mr. F. B. Fancher, of Lansingburg, N. Y., enclosing some remarks from Mr. Sullivan Bates, of Bellington, Mass., in regard to the cultivation of the cranberry. Mr. B. says the variety which he calls "Bell Cranberry" can be cultivated on upland, and that he knows of no other kind that can be naturalized to dry soil. He states that it is necessary that the soil should be quite poor, and that it is generally best to remove the sod or vegetable matter to reduce it to a proper state of sterility; but, if the soil is so poor that grass and weeds do not grow on it, it may be plowed and harrowed and the plants set without any other preparation. The soil is marked in drills two or three feet apart, and the plant set six inches apart in the drill. They should be hoed the first season, and they will cover the ground in three years. He states the produce at 150 to 400 bushels to the acre.—Mr. Fancher can supply plants.

CRESS.—There are three kinds of this herb, plain, curled, and broad leaved,—the former of which is in much use as a salad herb, with mustard, rape, radish, &c.; the curled and broad leaved sorts should be thinned to half an inch asunder, but the plain is to be sown thickly; the curled makes a pretty garnish. In the cold months, this salad herb, as others, is sown on the gentle hot-beds, giving plenty of air, and, as the spring advances, in warm borders, or under hand glasses; the London market gardeners sow just within the glasses which cover the cauliflower plants, &c. In summer it should be sown in shady, cool ground, and daily watered, or it may be sown in the most sunny situation, if hooped over and shaded with a mat. Break the mould fine, and draw level shallow drills, and cover only a quarter of an inch; it may, however, be sown as broadcast, the ground being just raked very smoothly, and the seed just covered with finely sifted mould; let it be sown on an average, once-a-week, and cut young; if that which is sown in open ground at an early season be covered with a mat, it will forward the germination. The American cress is much like water-cress, only more bitter; it answers as a winter and early spring salad, being sown in August broadcast, or rather thin in drills; the plants being cut, or the outside leaves pulled off, shoot again.—*British Banner.*

HOW TO GROW MELONS.—A correspondent of the *Horticulturist* says:—I had the pleasure of eating some very fine musk melons at Cottage Lawn, the seat of Thomas W. Ludlow, Esq., and he kindly gave me the following account of his method of treating them, which is so much less expensive and more simple than the usual manner of protecting the young plants with hand-glasses, which require a small fortune devoted to them alone, that I think it may be useful to some of your readers:—"After the young plants have been 'started' in a frame, they are set out in the melon patch, and each one is enclosed by four common bricks, laid flat on the broad side, and the space at the top is covered over with a pane of ordinary window-glass. This enclosure remains until the plant reaches the glass, when the bricks are turned up on one side, and the glass replaced. By the time they have grown up to this 'roof,' they are strong enough to do without protection, and the season so far advanced that frost is not feared. The fruit, resulting from this treatment, was uncommonly fine and large, and the vines very healthy and strong. The seeds may be sown at once in the melon-bed, if more convenient, and enclosed with the brick and glass."

THE SHANTUNG CABBAGE.—A correspondent at Shanghae, writes to a gentleman in England, that he is about to send him seme seeds of the Shantung cabbage, which one of the French missionaries had produced in the north of China. He says that it somewhat resembles the Savoy in appearance, is of a delicious flavor, and weighs 60 lbs. It is supposed that July or Augus is the right month for sowing.

PLANT WHOLE POTATOES.—We always prefer to plant whole potatoes in preference to cuttings or parings, though pieces of potato often produce well. Some farmers cut out the eyes and plant them instead of the whole potato, but they run a greater risk by this practice than by planting whole ones. Sometimes not half a crop is obtained from eyes or parings.

GIRLS.

Have you a father, have you a mother? Do you love them? Girls, do you know the value of your mother, if you have not lost her? Nobody loves you nobody will love you as she does. Do not be ungrateful for that love; do not repay it with coldness or a curse of coldness will rest upon you, which you can never shake off. Unloved and unloving you will live and die, if you do not love and honour your father and mother.

One thing, never call either 'old man' or 'old woman.' It is quite a habit in this country for young people to name their parents thus. This is rude, impudent and undutiful. Any aged person is an old man or an old woman. There should be something sacred, something peculiar in the word that designates parents. The tone of voice in which they are addressed, should be affectionate and respectful. A short surly answer from a child to a parent falls very harshly on the ear of any person who has any idea of filial duty. Be sure, girls, that you each win for yourselves the name of a dutiful daughter. It is so easy to win, that no one should be without it. It is much easier to be a good daughter than a good wife and mother. A child's duties are much more easily performed than a parent's; so that she who is a good daughter may fail to be a good wife or mother; but she who fails in this first, most simple relation, need never hope to fill another well. Be sure, then, that you are a good daughter. It is the best preparation for every other station, and will be its own reward. The secret you dare not tell her is a dangerous secret, and one that will be likely to bring you sorrow. The hours you spend with her will not bring you regret; and you should never feel disappointed or out of humor, for not being permitted to go to some place to which you wish to go. You should love her so well that it would not be felt a punishment to give up the gayest party to remain with her.

Nothing is more beautiful than to see a girl take off her things, and sit smilingly down with her mother, because she wished it. Go and kiss mother, as you used to do when a child, and never grow too large or wise to be a child at her side.

TRUE charity consists in the performance of every duty of life, from the love of justice with judgment.

THE SOLITUDE OF THE HIMALAYA.

The mean height of the Himalaya is stupendous, certainly not less than from 16,000 to 20,000 feet, tho' the peaks exceeding that elevation are not to be numbered, especially at the sources of the Sutlej; indeed, from that river to Kalee, the chain exhibits an endless succession of the loftiest mountains on earth; forty of them surpass the height of the Chimborazo, the highest but one of the Andes, and many reach the height of 25,000 feet, at least. So rugged is this part of the magnificent chain, that the military parade at Sabatheo, half a mile long and a quarter of a mile broad, is said to be the only level ground between it and the Tartar frontier on the north, or the valley of Nepaul to the east. Towards the fruitful valleys of Nepaul and Boshan the Himalaya is equally lofty, some of the mountains being from 25,000 to 28,000 feet high, but it is narrower, and the descent to the plains exceedingly rapid, especially in the territory of Boshan, where the dip from the table-land is more than 10,000 feet in ten miles. The valleys are crevices, so deep and narrow, and the mountains that hang over them in menacing cliffs, are so lofty, that these abysses are shrowded in perpetual gloom, except when the rays of a vertical sun penetrate their depths.

From the steepness of the descent, the rivers shoot down with the swiftness of an arrow, filling the caverns with foam, and the air with mist. At the very base of this wild region lies the elevated and peaceful valley of Boshan, vividly green, and shaded by magnificent forests. Another rapid descent of 1000 feet leads to the plain of the Ganges. The loftiest peaks bare of snow give great variety of colour and beauty to the scenery, which in these passes, is at all times magnificent. During the day the stupendons size of the mountains, their interminable extent, the variety and sharpness of their forms, and, above all, the slender clearness of their distant outlines melting into the pale blue sky, contrasted with the deep azure above, is described as a scene of wild and wonderful beauty. At midnight, when myriads of stars sparkle in the blue sky, and the pure blue of the mountain looks deeper still below the pale white gleam of the earth and snowlight, the effect is of unparalleled solemnity, and no language can describe the splendour of the beams at daybreak streaming between the high peaks, and throwing their gigantic shadows on the mountains below. There, far above the habitation of man, no living thing exists, no sound is heard; the very echo of the traveller's footsteps startles him in the awful solitude and silence that reign in these dwellings of everlasting snow.

Physiological Fact.—A surgeon in the U. S. Army, recently desired to know the most common cause of enlistments. By permission of the captain of the company, containing fifty-five, on a pledge never to disclose the name of any officer or private except as a physical or metaphysical fact, the true history was obtained of every man. On investigation, it appeared that nine-tenths enlisted on account of some female difficulty; thirteen of them had changed their names, and forty-three were either drunk. or partially so at the time of their enlistment. Most of them were men of fine talents and learning, and about one third had once been in elevated stations in life. Four had been lawyers, three doctors, and three ministers. The experimenter believes, if it were not for his pledge of secrecy, that this would be as interesting a history, and would exhibit the frailty of human nature as fully as any experiments ever made on the subject of the passions.

Keeping Fowls—Value of their Manure.

At a late agricultural discussion in this city, Mr. Chester Moses, of Shaneateles, made some valuable remarks on poultry keeping. He stated that for several years past, he had kept 600 or 700 fowls, and the last winter 900. His chief object is eggs, of which his fowls average about 100 each, annually. They are not confined but are allowed to range at will. Their food is principally wheat screenings, with some corn, buckwheat and animal offal. He is also particular to allow them plenty of oyster shells, pounded, of which especially during spring, or at the season when they lay most, they eat large quantities. The lime of the oyster-shell doubtless contributes to the formation of the shell of the egg, and perhaps assists, also, in the digestion of the food.

He keeps the Polish or Top-knot fowls, and the common country stock—prefers the former on account of their laying more steadily the first year, or two years—thinks there is not much difference in the black and spangled varieties of Top-knots. His general practice is not to keep fowls after the second year; as they do not lay so well after that age, they are regularly sold off, and the stock is kept up chiefly by purchase, tho' some chickens are raised; and it is only for the latter object that cocks are kept, Mr. M. being satisfied that they are no benefit in the production of eggs for market.

Mr. Moses considers the manure of fowls of much importance, and takes care that it is all saved and applied to his crops. Under the building in which the fowls rest is a cellar, into which all the manure is put. In spring, just before planting time, the manure is worked over and mixed with plaster—sometimes with plaster and ashes in equal proportions—using enough of these articles to make the manure so dry as to pulverize thoroughly.

The domestic guano, of which Mr. M. sometimes has the quantity of 300 bushels in a season, produces a powerful effect on the growth of Indian corn. His mode of applying it is, to drop a handful in each hill, which is then covered half an inch or more with earth, in order to prevent the seed from coming in immediate contact with the manure, which, experience has shown would prevent its germination. Mr. M. stated that he had tried this compost in comparison with good hog manure by applying each to corn in the same field, and on similar soil. On one part, half a shovel full of hog manure was put in a hill, and on the other part, a handful of the hen manure compost. The crop was best where the latter was used, and the succeeding crop (which was oats) showed the same result in favor of the hen manure.

On another occasion he manured ten acres with the hen manure, which produced sixty bushels of corn to the acre. On a part of this piece he used the manure only on alternate rows, leaving the intermediate rows with no application. The ears were "mere nubbins" on the rows that had no manure. He planted pumpkins in a row that had no manure, and on another row that had the proportion given to the rest of the field.—The row which had no manure produced no pumpkins of any value; the other produced fifty-one fair sized, good pumpkins.

Mr. M. stated that his son was engaged with another person in the poultry trade, and that in the winter of 1849-'50 they sent between twenty and thirty tons to New York and Boston.—*Albany Cultivator.*

New Way of Producing Water Gas.

Explanation of the Phenomena of Thunder and Lightning.—Mr. Appleby, apothecary in Central square, East Boston, in a communication to the *East Boston Ledger*, thus describes a manner of involving gas from water, which he has discovered, and to which he invites the attention of scientific men. He says:—

"I produced the gas from cold water, without a battery, without a helices of copper, zinc, or brass, and without the use of mercury. I fill a proof bottle with water immediately from the Cochiuate pipe, carburet it in the same bottle, and then, by adding the necessary chemicals, separate hydrogen from the oxygen. I now attach a tube, made upon the principle of the safety lamp, to the mouth of the bottle. To prevent an explosion, a certainty quantity of the gas is allowed to pass over, thus removing what atmospheric air may remain in the bottle. A lighted match now applied to the tube produces a pure, bright and beautiful flame. I have exhibited this light in my shop for the last four months, to the entire satisfaction of a number of intelligent gentlemen who have seen it.

In the course of my experiments with the water gas, an idea struck my mind which seems to me to explain more fully than has ever been done before the phenomena of thunder and lightning. It was not till after several explosions that I succeeded in producing the light. When a number of these had occurred, the idea flashed across my mind, that the explosion of the cloud is caused in the same way through the ignition of the hydrogen it contains by the contact of electricity.—Electricity, the most powerful chemical agent known, and the only one which will decompose water, separates the hydrogen from the oxygen, and incombination with atmospheric air, explodes the former, and produces the sublime phenomena which we witness every summer in the clouds.'

Beet Root Sugar.

The following is from the *Cork Examiner*:—Some portion of the attention which is now generally turned towards the promotion of manufactures would be usefully directed to the production of sugar from beet root. Already it is carried on to a considerable extent in France and Belgium where vast numbers of people are employed in it, and large establishments erected for the purpose. We have seen a specimen of Sugar made from beet root in the latter country, which was exhibited at a large meeting of the Dublin Society, and which naturally excited much curiosity. It is of the purest appearance, of strong sweetening quality, and in colour resembling the species of sugar known as crushed lump. The most singular part of the matter is, that it was manufactured in a space of about forty-five minutes, the entire time occupied from taking of the root out of the ground and putting it into the machine to the production of the perfect article. Some reluctance was evinced to tell the price at which it could be made; and in reply to a question on that point, it was said that it could be produced at the market rate for sugar of a similar quality in this country, about 6d per pound. We have ascertained, however, that the article could really be made for 2½d per pound. An acre of ground is calculated to yield fifty tons of Silesian beet, which in France and Belgium give three tons of sugar, worth about £50; the refuse being useful for feeding cattle, and in those countries being actually used for that purpose. But from the superior fitness of the Irish soil, as shown by experience to be the case, it is confidently affirmed by persons competent to form an opinion, that eight per cent of sugar could be obtained here on the raw bulk."

Wonderful Structure of the Heart.—An anatomist (as Dr. Paley observes) who understood the structure of the heart, may say beforehand that it would play, but he would expect, I think, from the complexity of its mechanism, and delicacy of many of its parts, that it would soon work itself out. Yet shall this wonderful machine go night and day, for eighty years or more together, at the rate of a hundred thousand strokes every twenty-four hours, having at every stroke a great resistance to overcome; and shall continue this action for this length of time, without disorder and without weariness. Each ventricle will at least contain one ounce of blood. The heart contracts four thousand times in one hour; from which it follows, that there passes through the heart, every hour, four thousand ounces, or 350 pounds of blood. In the human body there is said to be about twenty-five pounds, so that a quantity of blood, equal to the whole mass of blood, passes through the heart 14 times in one hour; which is about once every four minutes.—*Buck's Practical Expositor.*

New Self-Centering and Self-Regulating Lathe.—Mr. Thomas R. Bailey, of Lockport, N. Y., has made a very valuable improvement in lathes for concentric turning, such as for broom handles, &c., for which measures have been taken to secure a patent.—The live spindle has a sliding cone mouth into which the rough material is placed, and the slide spindle has also a cone mouth in a line with the other. The rough material is placed within these cone mouths, and must be centred, as the spindles always bear a fixed relation to one another, and the cone mouths guide the rough material to lie in a true central line with both spindles. When the slide has run its length, it strikes a cam upon the frame, and the broom handle, or whatever it may be that is turned, is thrown out from the spindles, and drops down. The turning tool can be guided by a fixed side pattern to turn out many different irregular forms. This lathe is easily attended and is very simple. It is a good, new, and useful improvement.—*Sci. American.*

Leather Cloth.—A new article of boots and shoes has just come up in England. It is called the Panama Corium, the leather cloth, and was invented by a person named Hull. The material is cotton, but has the mass and general appearance of leather, and receives a polish from ordinary blacking, and in the same way. It is used only for the upper, the sole being leather. It is said to be as durable as leather, never cracks or splits, and possesses the advantage of no drawing the foot.—*Sci. American.*

Acknowledging the Corn.—The *Maine Farmer* acknowledges the receipt of a bag of 'popping corn' which was sent to their office accompanied by the following rhyme:—

"Corn for the richman—corn for the poor;
Corn for the chickens around the barn door;
Corn for the master—corn for the dog—
Corn for his cattle—corn for his hog;
Corn for the grist-mill—corn for the shop;
Corn for the "Maine Farmer" devils to pop!"

EXCESSIVE LABOR OF HOUSEKEEPERS—CLEANING HOUSE, &c.

BY FRANCES D. GAGE.

Dear Mrs. Bateham:—Permit me through the housewife's department of the *Cultivator* to renew my acquaintance with its numerous readers. After three months of sickness and suffering, I am joyful and thankful to be able to use my pen again, and feel very much like shaking them every one by the hand, and earnestly entreating them to give attention to your suggestions with regard to health. Fresh air and out-door exercise, will produce more rosy cheeks than all the doctors pills ever advertised in the newspapers. I have a word of advice to give to the farmers wives and daughters about exercise, they are apt to exercise too much—to work too hard, mothers especially, and to "break down," as they term it, too early in life. This sometimes is a matter of necessity, but more frequently a want of care and economy of time and labor. This is the season of house cleaning, and a word of caution may not be amiss. Let me tell you what Mrs. Jones thinks about it.

Now, girls, says the old lady, (she's not so very old, either,) I shall let you younger ones, clean the house this spring; I think it's time for me to stop and let you take the lead; if I don't you will never learn how. There's Mrs. Thomas' girls—they scarcely know how to get a meal of victuals—sprightly, willing girls too, they are, all three of them. But their mother never thinks they can do any thing right, and always complains that she is tired and "clean worked down," and never sees a bit of comfort, because she has to work so hard; while i 's all her own fault and she ought to know it. Of course she can't expect every thing done just as nice as she should do it, the first or the second time. But there must be a first and second time, and the daughters have got to learn—and if the mother had a thimble full of sober thought, she would see that the sooner they learnt the better. What's that you say, Kate? "If father will let Dick help shake the carpets you can get through all the house cleaning in two days?"

I shall not consent to any such arrangement—take it soberly and calmly and do it well. There is no need of half killing yourself one week—to gain time to be idle the next. All the time there is passing belongs to us, and if we use it right it will suffice. I know from experience just how you feel about it; can't bear to be in a "muss" and have things turned upside down, so you'll go to work and do three days work at house cleaning in one—take a hard cold, or something worse, when if you would use a little patient industry all might go right.

I remember how I used to do. When you was a baby, Kate, about four months old, I had to clean house; not such a house as we have now, nothing but a log cabin, with one room for kitchen, dining, parlor and best bed-room, besides; and a little room built on back, where father and the children slept. But it had to be cleaned and whitened as well as larger houses. So one fine spring morning I went at it, moved the beds and every thing else out of doors so I should have nothing in the way. Just as I had got every thing out of the house, Mr. Jones came along. "Why Mary," said he, "what on earth are you going to do—where are we all going to stay to-night?" "Stay," said I, quite in a pet, "stay at home to be sure." "You don't expect to get all this work done to-day yourself, do you?" said he. "Yes I do," said I. "Well," said he, "go ahead." I had forgotten to get things ready beforehand, and had to run a quarter of a mile up the creek in the warm sun to get white clay for white-wash—for in those days we could not get lime. Well, I worked away—white-washed the house pretty near all over, inside and out, took every thing back again, and had all put to rights, before sun-down, and when your father got home from mill, had his supper ready and tried to look cheery. But I was so tired I could'nt but just move one foot before the other. Well, I went to bed, and the baby cried and fretted, as it would of course, when its mother was in such a plight. At last I fell asleep, but not till I had taken a good cry—because I had to work so hard and had no body to help me, and all that. Before morning I awoke with a dreadful pain and in a high fever, and your father posted off after the doctor. He did'nt scold, but as he went out I heard him say, "no more than might be expected!" Well, girls, I had to lie four weeks, suffering intense pain most of the time, and your father had twenty dollars doctor bill to pay, and a hired girl's wages and board, besides losing a good deal of time himself, which put the farm behind, and all just because I did'nt like to be in a "muss." Now, take my advice, girls; work moderately, steadily, and you will be the gainers in the long run; and always keep in mind that your health is of more importance than a clean house."

So thought Mrs. Jones, and so think we. There is much sickness and ill health produced by want of exercise and much by injudicious labor and over exertion.

Mount Airy, April 2, 1851. [Ohio Cult.

No More Corns.—There is no doubt some quackery in the corn doctor's trade, but there is more ignorance. For the benefit of both him and his patients, we will now disclose a secret which will relieve humanity from a load of misery, not the less difficult to bear than it is unpitied or ridiculous. The cause of corns, and likewise the torture they occasion, is simple friction; and to lessen friction you have only to use your toe as you do in like circumstances a coach wheel—lubricate it with some oily substance. The best and cleanest thing to use is a little sweet oil rubbed upon the affected part (after the corn is carefully pared) with the finger, which should be done in getting up in the morning, and just before stepping into bed at night. In a few days the pain will diminish, and in a few days more it will cease, when the nightly application may be discontinued. The writer of this paragraph suffered from these horrible excrescences for years. He tried all sorts of infallible things, and submitted to the manipulations of the corn doctor, but all in vain; the more he tried to banish the more they wouldn't go; or if they did go, (which happened once or twice under the strong prevailment of caustic,) they were always sure to return with ten fold venom. Since he tried the oil, some months ago, he has had no pain, and is able to take as much exercise as he chooses. Through the influence of this mild persuasive, one of the most iniquitous of his corns has already taken itself off entirely: the others, he still pares at rare intervals; but suffering no inconveniencies whatever from them, he has not thought it necessary to have recourse to caustic—which sometimes, if not carefully used, and vinegar and water applied at once to the toe, causes almost as much smart as the actual cautery.—*Chambers' Journal.*

Chain of Being.—Bitumen and sulphur form the link between earth and metals—vitrols unite metals with salt—crystallization connects salts with stones,

the amainthus and lythopites form a kind of tie between stone and plants—the polypus unites plants to insects; the tube worm seems to lead to shells and reptiles; and the eel forms a passage from reptiles to fish; the anas nigra are a medium between fishes and birds; the bat and flying squirrel link birds to quadrupeds; and the monkey equally gives the hand to the quadruped and to man.—*Sci. Journal.*

Editor's Notices, &c.

CANADA: Past, Present, and Future. By W. H. Smith. Toronto: Thomas Maclear, 45 Yonge Street.—We have lying before us the fourth part of this useful publication which completes the first volume. The Map, containing the Counties of Lincoln, Haldimand, Welland, Wentworth and Halton, is as usual, neatly engraved, with the views of principal places distinctly laid down. The present part consists of an exceedingly well written introduction, setting forth the discovery of Canada, with an account of its subsequent condition and progress, both under the French and British, brought down to the present time. This forms a very appropriate and useful introduction to the work, and will be read with both pleasure and profit by the majority of subscribers. The present is a good opportunity for new subscribers to commence taking the work, as we learn from an advertisement that all surplus copies after the publication is completed, will be sent to England, where its circulation cannot fail to produce a favourable impression respecting Canada, as a field for emigration. It is, in short, a publication highly deserving an extensive patronage; and we would say to such of our readers as have not subscribed already, do so at once.

STEPHENS' FARMERS' GUIDE.—We have received through Mr. Rowsell, Bookseller of this city, the latest number of this valuable publication. The steel and wood engravings continue numerous and fully maintain their former high order of excellence, and Professor Norton's useful appendix to the same is completed in the 17th Number, which contains, also a very interesting preface from the able pen of Mr. Stephens. The enterprizing Publishers, Messrs. Scott & Co., New York, have announced their intention of not exceeding the original charge for the work, viz: $5; although it will contain 200 pages more than was originally contemplated. This act of good faith and liberality will be appreciated by a discerning public; and we trust that no farmer who is desirous of improving alike his head and fields, will not be without this systematic publication, the cheapest and most complete in the English or any other language.

NOTICE.

G. L. Morris's Great Sale of Improved Domestic Animals, takes place on the 24th inst., for further information see his advertisement in this paper. Catalagues can be obtained at this office or from Mr. Morris, if required to be sent by mail, the postage will be prepaid.

THE PRIZE LIST of the Provincial Agricultural Association for 1851, will appear in our next number. *Canada occupies an honourable position in the Great Industrial Exhibition of all Nations!* This fact should incite us to greater zeal and increased efforts in the great cause of industrial and social progress, that will be tested at Brockville, in September next. There must be no looking back, *Onwards*, should ever continue our motto.

"HINTS TO THE FARMERS of Prince Edward Island," by Judge Peters, has been received, and shall be noticed in our next.

AGRICUTURAL SEEDS.

JUST received and for sale by the Subscribers.

Blood Red Mangle Wurtzel,
Yellow Turnip,
Spring Vetches,
Superior Sugar Beet, equal to Mangle Wurtzel for feeding cattle,
Turnip Beet,
White Belgium Field Carrot,
Purple Top Sweed Carrot,
Skirving do do
Yellow Aberdeen do
White Globe do
do Flat do
Early Stone do

—ALSO—

A general assortment of Fresh English Garden and Flower Seeds.

ONION SEED.

A few Barrels of FINE RED ONION SEED for sale by

LYMAN BROTHERS, & Co.

Toronto, Bpril 1st 1851.

FLAX SEED.

100 BUSHELS FLAX SEED of a superior quality and cleaned expressly for agricultural purposes.

LYMAN BROTHERS, & Co.

CANARY SEEDS.

25 BARRELS superior English Canary Seed.

LYMAN BROTHERS, & Co.
St. Lawrence Buildings,
Toronto, 1st May, 1851. Toronto.

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,

Near the Toronto Necropolis, East of Parliament Street

N.B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

DOMESTIC ANIMALS AT AUCTION.

THE postponed yearly sale of FULL BRED SHORT-HORNS and IMPROVED DIARY STOCK, consisting of about fifty head, will come off at my farm on Tuesday, June 24, 1851 at 12 o'clock, M. I shall sell all the improved Diary Stock which is composed of the finest Short-Horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which com posed the improved Short Horns.

I am now breeding the Short-Horns, Devons, and Ayrshires, each seperately and pure, which owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own county Society, [with the exception of last year, when I was not a competitor at either,] it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Diary Stock. Several of the Bulls will be of the most appropriate age for efficient service for the coming season. All cows and Heifers old enough, will be warranted in calf at the day of sale, by my imported Bull "the Lord Eryholme," or my celebrated Bull "Lamartine."

I own two through bred Devon Bulls; one the celebraied old Major, the other, one and a half years old im ported by me from Devonshire. One of the above animals will be sold—which one, I have not as yet determined.

A full catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day,

I also have about 20 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to imported Buck "Babraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain Stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this. in case they prove not to be so, it shall be optional with the purchaser, on his *certificate of the fact*, either to receive from me $25 (say twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give $25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm at two weeks old.

Stock purchased to be sent a distance, will be delivered on ship-board or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should not be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivating of the soil, and to benefit the consuming country at large.

All communications through the Post please prepay, and I will prepay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next.

Persons wishing to view the stock at any time will find my superintendant, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851 at Mount Fordham, Westchester County, eight miles from the City of New York, by Harlem Railroad.

April 2.—3t L. G. MORRIS.

POSTSCRIPT.—I decline selling any Stock by private sale, so as to offer the public all the animals I have to part with without having any previously selected from the herd and all animals offered will be positively sold.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his his farm 2½ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirklearington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Bull Meteor, these are Bates's Bulls, and their reputation as stock getters are two well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 8 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy near Albany, New York.

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

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Twenty-five Copies and Upwards . Half-a-dollar each

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All remittances should be forwarded to William McDougall, Proprietor, Toronto.

All communications are expected to be pre-paid.

PRIZES FOR THE IMPROVED BREEDS OF CATTLE.

To the Editor of the Canadian Agriculturist.

Dear Sir,

I perceive in perusing the last number of your valuable journal, that your correspondent of Wilmot, Daniel Tye, Esq., is desirous to ascertain *why* more premiums are offered in this country to the Durham breed of cattle, than to other pure breeds. I should not have taken up my pen to reply to Mr. Tye's letter, after the explanation so ably given by you which he requires, but for the concluding paragraph in Mr. Tye's letter, wherein he seems to *imply* that he will prove that the Durhams are *not* deserving preference over other breeds. I think quite the reverse; and having had to do with almost all breeds that the country produces, I fancy I can *shew* that they *do merit preference* over other breeds in this country at the present time. I must, however, add, that, I am in a great measure induced to enter upon the subject, in the hope, with yourself, that, a discussion thereon may prove ultimately beneficial to the breeder and feeder of stock, and that facts relative thereto may be elicited which at present are known but to few of the fraternity.

As you have, I conceive, sufficiently explained to Mr. Tye the reason why more premiums are

offered to the Durhams than to other pure breeds, I need not further notice that part of his letter, than remark that, in my opinion it conclusively shews that, as the number of Durhams is far greater than other pure breeds in the country, they must be held, generally speaking, in greater estimation, for all purposes, by the agriculturist; or why should their numbers be so much larger! As there has been the same opportunity afforded the farmer to patronise other breeds, why has he not availed himself of it?—for this simple reason that, the *Durhams*, on the whole, if properly selected and bred with skill and care pay better! It is a fact known to all, that the Durhams, from a herd of high character, and in an able breeder's hands, fetch a *far higher* price for breeding purposes than any other pure breed in this country. They are frequently sold, to my own knowledge, from $150 to $400—and even beyond that, I might safely go. Does any one ever hear of Herefords, Devons, or Ayrshires fetching that price in this country, or any thing near it? I think this circumstance alone is a pretty cogent reason for the Durhams being in greater numbers and more extensively patronised than other pure breeds. But there are excellencies in the breed, that I will now name, which doubtless induces people to patronise them so extensively.

In the first place there are no better milkers to be found, (this I have little doubt many of your readers will be surprised to hear, but which I am at any time ready to prove,) provided you set about procuring them the *right way*—that is by getting them from a *milking* family, for it is well known to all Durham breeders that, there are, as it were, two distinct families of the Durhams as regards their fattening and milking properties. The latter is kept up only by great care and skill being exercised in breeding. It is a well known fact that many Durham cows, where the breeder has been for years breeding exclusively for the shambles (that is to obtain a large weight at an early age) that the dam will scarcely rear her own calf. But those again like myself, who breed chiefly for milk make a very different selection in choosing an animal. I can produce at the present time from the farm I am now on, thorough-bred Durhams that will give more and richer milk from the same pasture in a given number of months in the year, than any other breed upon the farm. And the variety consists of Durhams—grade Durhams—grade Devons, nearly thorough-bred (purchased of Mr. Tye) and grade Ayrshires, with two or three natives, so called; all selected with as much skill and care as I could exercise in regard to their milking qualities. The Durhams, and grade Durhams fill the pail the fullest and the longest throughout the season; and of the grade Devons—grade Ayrshires, and natives, I know not which bears the palm, as they are nearly equal. Every one, however, knows very well that the thoroughbred Ayrshires rank very high at home and abroad, and justly so for their milking properties; but for working oxen, or beef purposes the qualification for the one or the other is rarely thought of, or looked for to any extent in that breed. Not that I mean to say they are not occasionally met with, as in all other breeds.

Again, the thriftiness of this breed I have heard spoken of as well as of the Devon as superior to the Durham, or in other words, that they will thrive better upon a less quantity of food. This I stoutly demur to! Let the conformation, or frame of each animal be the same, as near as may be, and with the same weight of food to each for a given time, and I dare hazard any thing in favour of the Durham, if properly selected, coming out the heaviest. I presume that Mr. Tye will not, for a moment, deny that the *Durhams* are universally allowed to come out heavier cattle at an early age than any other breed. This is an admitted fact, and has been proved often and again at the Smithfield shows. The Herefords it is also well known have come close upon the heels of the Durhams in this respect,—and of late years the older cattle have taken equal premiums with the Durhams; and in one or two instances have, I believe, carried the larger number of premiums as beef animals. But they have not all along continued to do so. But who ever heard of any one going into Here-

fordshire to select a herd of cows for milking properties?

I have myself, for upwards of 25 years been engaged in dairying, and breeding, all kinds of stock, and was brought up in one of the largest cheese and butter counties in England—(Leicestershire.) But I never heard of, or saw in that county, or in the adjoining cheese counties, Nottinghamshire, Derbyshire, Warwickshire, Northamptonshire, Lincolnshire, and Rutlandshire, that either the Herefords or Devons were patronised by any of the extensive dairymen in the different counties just alluded to. But I do know and can bear witness that the "Leicestershire long horns," (or Bakewell's breed,) of great celebrity at one time as milkers, as well as many other breeds, gave way to the Durhams and grade-Durhams. This in fact, took place, year after year, all around me when I first commenced dairying and breeding, till there was not, in the course of a few years, a single dairy left, in that and other vicinities with which I was well acquainted, of the old long-horn and grades of that breed. But the Durhams and grade-Durhams superseded all other breeds in the extensive dairies that I was familiar with.

The Herefords, however, no one can dispute, are a beautiful and profitable breed of animals, (I have grazed hundreds of them for the Smithfield market) and doubtless there are good milking cows to be found amongst them, and it would indeed be strange if it were not so, in such an extended and old established breed. Then again the oxen of the Hereford breed, as well as of the Devon are considered by some to be superior to the Durham for the Yoke. This may be so, or it may not, for *when* and *where* let me ask, has the *test* been *fairly made?* Who ever saw a pair of *thorough-bred* Durham steers or oxen in the Yoke? The breeders of these animals generally put them to feeding in consequence of the quick return they make, instead of to the yoke, when they find them not sufficiently good to reserve for breeding purposes. And I believe, as far as I have witnessed, that the half-bred, and three-quarter-bred Durhams are quite equal, if not superior in speed and power, when properly trained at an early age, to any other breed that can be procured here. They have at any rate more weight and strength than the Devon, if not more speed. I have heard others, who have tried them *fairly* for a number of years state the same thing, and when no longer needed in the yoke, make heavier animals, and pay for fattening better than any other in this country. And now for the Devons, my friend Mr. Tye's favorite breed. They must, by all, be allowed to be very pretty and symmetrical animals; but as regards the profit of them, which I know he wishes, and will I doubt not, endeavour to make appear, over the Durhams, I cannot yet clearly see. I will undertake to prove that they are not superior, or even equal, in milk to the Durhams as regards both richness and quantity. I will also without much trouble prove, that neither the cow nor ox when put up to fatten will turn out equally profitable to the owner as the Durham cow or ox. The quantity of food consumed by each being duly estimated. They, the Devons, though perhaps nice in quality, come out too small, they have not sap or weight enough about them to be as profitable as they ought. The frame is not large enough to put on the weight; and the butchers here will not pay for *quality*, and, generally speaking, are very chary in paying (sufficiently) for weight. I have had practical and convincing proof of that this last winter in stall-feeding, independently of the experience in grazing thousands of the Devons, with almost all other breeds for Smithfield market, where, we always in the summer months obtained nearly, and sometimes quite as much, pe pound, for the beautiful spayed Devon heifer, and ox, as for the equally handsome and greatly prized Highland Scot!

In fact, during the hot summer months they were both more readily sold in consequence of their *small weight*, as well as for the superior quality of their meat over other breeds. But here, I am sorry to say, the *quality* in purchasing an animal, with some men, is almost the last consideration; though, I trust, that we are somewhat progressing in that respect, even in this

country, and that by and by, *quality* will be duly appreciciated by *all parties.*

I do not wish, Mr. Editor, that any one who may read this letter should, from any thing I have advanced, be prejudiced against one breed or the other under discussion; I have merely stated what I knew to be facts, and it will only go for what it is worth, but I would say, let each individual try for himself which breed suits his soil, or herbage, and his location, or his purpose best. There ought to be great consideration paid to this circumstance in the selection of animals either for breeding or feeding purposes. Nor do I wish it to be thought that I am myself prejudiced against any particular breed, for I am ready to walk twenty miles, aye fifty, if I were able, any day to see a really good animal of any breed, and to purchase it too, if within my means. I think both the Herefords and Devons have many excellencies, and that they are splendid breeds of cattle as well as the Durhams, and will at all times, if judiciously bred, please the eye with their graceful form and symmetrical beauty, as well as fill the pocket. But, I must, in conclusion say, from my *own experience*, added to that of others, whom I have frequently conversed with on the subject, that for *all purposes* upon the farm, the Durhams will decidedly pay the most money to the breeder, dairyman, and feeder. If, however, Mr. Tye, or any other gentleman can shew to the contrary, from their experience, I shall be happy to hear of it, and see it proved. But as I am well aware, from casual remarks I have frequently heard made, that an impression is abroad that Durhams are no milkers, or rather that they are poor milkers, I am desirous to remove such an erroneous impression from the minds of the ignorant on this subject; and do not hesitate to say that I feel fully confident that 10, 15 or 20 thorough-bred Durham cows could be got together in this Province, or a like number of grade-Durhams that shall be *fairly tested* against an equal number of thorough-bred or grade-Herefords, Devons, and Ayrshires, and come out victorious in regard to their milking qualifications. And for the benefit of the agricultural community generally of this Province, I heartily wish such an experiment could be *fairly* and *honorably* carried out. I, for one, will gladly lend my aid in every way possible towards its accomplishment. But I would say that such an experiment should not be attempted with less than 15 or 20 cows of each breed, for in every pure, or grade-breed, and in those possessing no specific breed at all, an odd cow or two can be found possessing extraordinary milking properties. And therefore upon a small scale such an experiment cannot be fairly tested. I well know that there will be many difficulties to surmount in such an undertaking, but nevertheless I think it accomplishable, and sincerely hope some one will take the matter up next year with energy and perseverance.

In conclusion, Mr. Editor, I must apologise for this lengthy epistle, but I could not treat a subject with brevity, fraught with so much interest and importance to us all as this subject evidently is; and I trust, that further information which may prove beneficial to the agricultural community generally, may be elicited therefrom. It is a subject that one could not be brief upon, and do it justice.

I am dear Sir,
Sincerely and respectfully yours,
H. PARSONS.

Guelph, 28th May, 1851.

P. S. Since writing the above, I have fallen in with a catalogue of thorough-bred short-horns for sale on the 26th June, possessing great milking qualities, the property of George Vail, Esq., of Troy, New York State, who, in his prefatory remarks makes an extract from a letter which he received from a gentleman (Mr. S. P. Chapman) to whom he sold several pure bred Durham cattle—and concludes by saying "one of the first animals I sold Mr. Chapman was a 2 year old heifer, at a cost of $150. This heifer was awarded the first premium by the New York State Agricultural Society, at Albany, last September, for the best milch cow, Mr. Chapman having made over 40 pounds of butter from her milk within ten days in June and 10 days in August, the cow having been kept on grass pasture only during the trial, and fifteen days previous to each trial." Surely this is direct testimony enough of pure bred Durhams being good for *milk*, and *butter* too! H. P.

DEEP PLOUGHING, &c.

To the Editor of the Canadinn Agriculturist,

SIR,

Your Cayuga correspondent has ventured to dissent from the generally recommended practice of *deep ploughing*, by the agricultural periodicals of the present day; and as I happen to think pretty much as he does, I will give you my views on that subject, which is a most important one, as practically connected with the dollar account of the farmer's profit and loss in his mode of cropping.

In the editorial remarks following Mr. Cooke's letter it is observed: "The advantages of a deep

seed-bed, are, a larger amount of active soil, in which the roots of plants find nourishment, the absorption of a larger amount of air and moisture, and consequently a much smaller risk of suffering from the effects of drought." Yet, sir, there is another point in deep plowing which is not often mooted by its advocates, and that is the advantages of a deep loose porous bed of quagmire, to which all *heavy* lands are subject in the alternations of frost and thaw, which the last winter presented; and every practical farmer must have noticed the tender state of his wheat fields on the abrupt breaking up of the frost; and if the thaw continues a day or two only, with a severe night, when the earth, if bare, again freezes, the young plants must feel, and severely too, the sudden change; the roots, even if struck to the bottom of the heavy quagmire, cannot withstand the action of the frost upon a soil surcharged with water, now of course converted into ice, and the plants lifted the full depth of the watery soil and at the next thaw lifted above ground, or as the term is, "Hove out." That this has been the case with many thousands of acres in my locality, present appearances too plainly indicate, and where deep plowing has been practised so much the worse is the wheat; and as the winters are becoming more and more alternating, the advantages of deep culture, will be, at least, problematical. A plant hove out and killed by the frost, can receive no benefit during summer growth; and as a walk over the wheat lands presents the simple fact, that without plants, no crop, and as the frost has destroyed three-fourths of mine after a regular practice of deep plowing, may it not be wisdom to plow three inches, instead of six; a bed of soil of three inches will be more enriched by a given quantity of manure, plowed with much less labour, and give the frost a much less chance of lifting the wheat plant.

For forty years light plowing has been my guiding principle in both England and Canada, and crops fully equal, often superior to those around have rewarded my labours. In *Stewart's Three Years residence in America*, published years before deep plowing or subsoiling became fashionable, mention is made of a farmer (whose name I do not now recollect), who raised crops with plowing three inches, which have not been surpassed (if equalled) in this boasted age of book-learning and agricultural inquiry. The mind of the editor appears somewhat sceptical in the advantages of deep ploughing in all soils and localities, and likely the result after a fair trial will be that upon a firm dry subsoil deep plowing and subsoiling will be advantageous, on heavy clays with an impervious subsoil, it will be otherwise; and all cultivators of such lands will act wisely to test by experiments on a limited scale the *profit* of turning over six or eight inches of poor heavy clay, when three will often bring much better crops.

Mr. Cooke thinks a fallow every fourth year twice plowed, scarified—and harrowed, with a flock of sheep as an antidote to weeds, is as good a mode of cultivation as any other; and in this we are perfectly agreed, as the plants when sown will have a firmer soil than when three or more times plowed: yet might not the whole of the fallow be sown to *clover* with advantage? Land light enough for corn or root crops, requires less of fallow; clover cannot be dispensed with on heavy clays, if *profit* is the object sought for.

If farmers wish a "plum-pudding" or, "sugar in their tea" such a "will-of-the-wisp" as protection will give it only to a *few* of her Majesty's subjects; while *all* who labour would be highly gratified with a plum-pudding for their Christmas dinner, and the sooner free-trade is the word of action, the sooner *all* will rejoice in a plum-cake, in addition to a pudding.

If Mr. C. will read *Adam Smith's Wealth of Nations*, and other writers on political economy, he will find that as governments have nothing to sell, being consumers instead of producers, they can in no degree influence production, which is the farmer's peculiar province all over the world; and is it right, just and necessary, that a custom-house officer should stand between him and his customer, to levy a duty in which *he only participates*, and his customer is obliged to give up his christmas pudding for the benefit of those idlers who are always willing to amuse the farmer with protection, and rob the one of his cake and the other of his pudding, for their own especial benefit? We are told in a late paper that the customs realized in one week £40,000. Now I ask *who pays? Production* is the watch-word of all agricultural periodicals, while *distributon*, is a mysterious secret, known far better to those who receive than to those who pay; and if Canada is so far advanced as to establish agricultural schools, let this mystery (*distribution*) be fully elucidated. All boys can harness horses, drive team, plow, &c., if raised on a farm; and I trust that matters involving active intelligence will be *primary*, not the secondary objects taught in such institutions, and thus qualifying the pupils for the Town-meeting, the municipal Hall, and the Legislature; and then farmers will arise to represent farmers, and leave lawyers and doctors in the free use of their time in attending to their own individual and professional concerns; we may then have fewer five

hundred dollar speeches, with acts that do not require tinkering session after session, until the original is a mere non-entity.

Yours, &c.,

JAMES JONES.

Stamford, C. W., May 27, 1851.

[We are always willing to insert brief and temperately written articles on questions relating to political economy, it being, however, understood that by so doing we are not necessarily committed to the views taken by our correspondents. With political questions of *a mere party* character, we can have nothing to do; such being altogether unsuited to our pages. We could like to see in operation such a system of education throughout the length and breadth of the land, as would awaken the dormant intellect of our agricultural youth, and qualify the coming generation of farmers, who will form the basis of the social pyramid, for their proper position in the legislature of the country. Our improved and improving Common School system is tending as fast, perhaps, as circumstances will allow, in this direction; while it is obvious that our grammar Schools and Colleges are obeying the same great social law of progressive impulse. We shall have something to say hereafter on the important question of deep cultivation, and in the mean while shall be happy to find a number of practical men, following the example of our intelligent correspondent, by giving the public, though our columns, the benefit of their experience in this particular matter. We may also express in this connection, the same hope in regard to another important question, so ably treated by Mr. Parsons, in another column.]—EDITOR.

SUPERIOR WOOL.—PERTH.

(For the Agriculturist.)

SIR,

On the 4th of June, Mr. Andrew Hope, a Scotch farmer, near Perth, County of Lanark, one of the active members of our Agricultural Society, sheared off from one ram, of the Leicester breed, 13½ lbs. of superior wool; being finer than usual. The fleece averaged some 7 or 8 inches in the length of the wool. The ram is young and not very large. I sent to him for the weight of it, but he has not yet handed it to me. This neighbourhood has produced some good sheep, and an active demand for wool has sprung up here.

W. O. BUELL.

Perth, July 2, 1851.

P. S.—Some of our farmers have been inquiring for an explanation of the *modus operandi*, in making sugar from the beet, in the very short space of time, lately mentioned in some of the newspapers. Can you enlighten us?

W. O. B.

[We are not acquainted with the process referred to; perhaps some of our readers can furnish the information.]—EDITOR.

"KNOWLSON'S COMPLETE FARRIER."

THE YELLOWS, OR JAUNDICE.

This disorder is very common in horses, and sometimes is either unknown or overlooked till it gets much worse to cure. A young horse is easily cured, but an old one is bad to cure. Some people may say, *How can a horse have the Jaundice, when he has no gall-bladder?* I answer, *though he has no gall-bladder in sight, he has a large vessel in the liver which answers the same end.* We may here observe the handiwork of God in placing a horse's gall-bladder differently from those of other animals, when we consider that the horse is the swiftest and most laborious cretaure in the world; so that if the gall-bladder had been placed on the liver it would always have been exposed to injuries.

SYMPTOMS. The white of the eyes is yellow, also the inside of the mouth, the tongue, and the bars in the mouth, are of a dusky yellow; the horse is dull, and refuses all kinds of food; a slow fever is perceived, which increases with the yellowness; the dung is often hard and dry, and of a pale yellow colour; the urine is commonly of a dark, dirty brown, and when it has settled, sometimes looks like blood: the horse stales with pain and difficulty; and if the disorder is not checked, becomes in a short time unable to stir about When this disease gets strong hold of a horse before proper medicines are applied, it is often fatal, or it brings on some other disorder as bad, or worse than itself.

CURE. Bleed plentifully, and as this disease is always attended by a costive habit of body, it will be proper to give a clyster or two before you give the physic. A clyster may be made of an ounce of cammomile flowers boiled in a quart of water with two ounces of Castile soap. Then give the following ball.

4	drachms	of Indian Rhubarb.
2	do	of Saffron.
6	do	of Socotrine Aloes.
1	oz	of Castile Soap.

To be brayed in a mortar with a little syrup of

buckthorn, and made into two balls; one to be given the last thing at night, and the other the first thing in the morning; and give plenty of warm water to work them off. If the disease is obstinate and will not yield to the above, give the following ball.

1 drach of Calomel, 8 drachms to an oz.
1 oz. of Barbadoes Aloes.
1 do of Venice Soap.
1 do of Turmeric.
1 drachm of Oil of Juniper.

All to be brayed in a mortar with a little syrup of buckthorn, and made into two balls; one to be given at night and the other in the morning, with plenty of warm water, and walking exercise till wrought off.

If the horse is better after the first medicine, repeat it, for it is much safer than the last; but if not, the last may be given, and repeated as need requires; but be careful not to give it in less than six days distance.

If, after giving one dose of the last ball, you give the following powders every othe day in celandine tea, if it can be got, or in warm ale, you will find them very useful in removing the complaint.

2 oz. of Salts of Tartar.
1 oz. of Æthiop's Mineral.
3 oz. of Turmeric.

These powders are proper to be given after either of the former doses.

There are so many prescriptions given for this disorder, that a horse's life is endangered by them, for although the things given by many people may do the horse no hurt, yet the disorder is getting stronger hold, and opening the way for others to follow; so that I advise all into whose hands this little treatise may fall, to give the medicines herein recommended a fair trial; and I hope they will be seldom disappointed of a cure.

THE STAGGERS.

This disease is a grevious one indeed. Farriers generally divide it into two heads,—The heart Staggers and the Head Staggers; but they are both one. It is caused by the liver making blood so fast that the cavity of the heart is overloaded and the blood flies up the neck vein till the head is overloaded too: and if relief cannot be obtained the horse soon dies.

Symptoms. The most common are drowsiness, watery and somewhat full and inflamed eyes, a disposition to reel, feebleness, a bad appetite, the head generally hanging down, or resting on the manger. There is little or no fever, and the dung and urine are very little altered. The horse soon begins to reel, and falls down, and is sometimes so outrageous as to bite every thing in his way.

Cure. In the first place, bleed him well as soon as you possibly can, by striking the veins in several places at once, and taking away four or five quarts at one time; and in order to raise up his head and shoulders, support them with plenty of straw. If he survive the first fit cut several rowels, give him clysters at night and morning, made of barley water and a little sweet oil and salt; and blow up his nostrils a little Cayenne pepper, or white hellebore. Also give him—

4 drachms of Bark.
16 grains of Turbeth Mineral.
½ oz. of Camphor.

Give it in a little warm ale. If the horse be outrageous, give him—

1 oz. of Tincture of Opium.
1 gill of Syrup of Poppies.
1 oz. of Tincture of Guaiacum.

Be careful not to let him knock his head, for it will increase the disorder. It he get through the first fit, give him two ounces crocus metallorum every day, to thin his blood, for fear of a relapse. It will be proper to give him the following ball once a month for some time after.

1 oz. of Rhubarb in powder.
½ do of Jalap.
1 drachm of Calomel, 8 drachms to the oz.

To be made into a ball with syrup of buckthorn. This ball will be of great use in thinning the blood, and preventing a return of the disorder; for when a horse has had one fit of it, he is very likely to have another, if care be not taken to prevent it.

SURE CURE FOR FOUNDER IN HORSES.

(From the Son of Temperance.)

As soon as you find your Horse is foundered, bleed him in the neck in proportion to the greatness of the founder. In extreme cases you may bleed him as long as he can stand up; then draw his head up as is common in drenching, and with a spoon put far back on his tongue strong salt, until you get him to swallow one pint. Be careful not to let him drink too much. Then anoint round the edges of his hoofs with Spirits of Turpentine, and your horse will be well in one day. The phleme arrests it from the blood, the salt arrests it from the stomach and bowels, and the turpentine arrests it from his feet and limbs. Founders must be attended to immediately. I have tried the above several times and always effected a cure.

R. A. P.

Pickering, June, 1851.

Charcoal.—The use of charcoal in growing plants is now become general, and it is found to produce the most effect when mixed in large pieces with the soil, in rough rotten. Powdered charcoal sifted so as to have the particles not larger than those of sand, has been used in Germany for striking cutlings in, and it is found superior to sand, as it supplies them with nourishment after they are rooted, by attracting oxygen from the atmosphere, and thus forming carbonic acid gas round the roots.

To keep the yellow bug from melons and cucumbers plant an onion in the same bed, or strew the ground with onion tops.

MAPLE SUGAR.—We were not aware, till informed by the Boston *Olive Branch*, that the quantity of maple sugar made and used in this country was large. That journal remarks that though "the quantity manufactured this year, is said to be less than the last year, it is nevertheless very large. Few are aware of the immense quantities of this article made in the Northern tier of States. It appears to be more than twice as much as that manufactured from the cane in all the sugar-growing portions of the United States. More than one-half of the twenty-three millions of the inhabitants in the United States are supplied with nearly all the sugar and molasses they use, from the rock or sugar maple. The price this kind of sugar bears in our market, always averages considerably above that imported from Havanna, and much above that coming from New Orleans or Brazil. Yet this immense amount of Saccharine matter is all manufactured in three or four weeks, by farmers, at a time when they could do very little else to profit. It is an article of so great profit, that we hope the farmers of New England, New York, Ohio, and other manufacturing States, will see to preserving their sugar orchards."

AGRICULTURAL ASSOCIATION OF U. CANADA.

A meeting of the Directors was held at Elgie's Hotel in this City, June 10th, 11th, and 12th, for the purpose of auditing the accounts, revising the Premium list and transacting other business connected with the Association. J. B. Marks, Esq., President in the chair. Present, Mr. Sheriff Ruttan, Ex-President; R. L. Denison, Esq., Treasurer; Mr. Sheriff Smith and M. Joness, Esq. Several of the officers being absent on a visit to the World's Industrial Exhibition in England, a number of gentlemen connected with agricultural societies favored the Directors with their attendance; R. Bell, Esq., M. P. P.; Sheriff Treadwell, Captain Shaw, H. Parsons, G. D. Wells, G. Crawford, W. McDougall, W. Gamble &c., Esqs.

Want of space compels us to condense as much as possible the proceedings of this meeting, with those of a subsequent one of the Board of Agriculture.

It was resolved that the Exhibition at Brockville be postponed one week, viz., to the 24th, 25th and 26th of September, in consequence of the New York State Fair having been appointed to be held at Rochester, on the days originally fixed for the Provincial Show.—It was also resolved that only one wooden-building be erected for Exhibiting articles, and that three capacious marquees be hired for that purpose.—No person residing in Upper Canada will be allowed to compete in the *Foreign* Class, X.—Votes of thanks were passed to the Secretary and Treasurer, who were elected Honorary members of the Association, and one hundred pounds to the former and fifty to the latter were awarded in consideration for their past services.—One hundred copies of Mr. Hind's lectures on Agricultural Chemistry, and 50 copies of Major Lachlan's forthcoming pamphlet were ordered to be purchased and distributed among the County Societies.—A memorial to the Governor in Council was submitted by a sub-Committee appointed to draft the same was adopted. The memorial sets forth the advantages of employing a portion of the convicts in the Penitentiary at Kingston, in burning lime on the Penitentiary grounds for agricultural and other purposes.—Another memorial was adopted to the Governor in Council, praying that the Government would recommend to Parliament such a grant of money to the Board of Agriculture, as would enable the Board to sustain the Provincial Association in a state of efficiency, and also to carry out the several important objects contemplated in its establishment. The Directors then proceeded to the Parliamentary buildings, and waited on the Honorable the Attorney General West, and the Hon'ble Inspector General, urging the importance of their objects, stating that £1,000 per annum would be required from Parliament to assist the Board and the Country in carrying them out. The statements of the Deputation were listened to with marked attention, and they left with a strong impression that the Government would give their case a favorable consideration.*

After some business of routine had been disposed of, the meeting broke up; the management of the Provincial Agricultural Association having by a Statute passed last Session, transferred the Directorship to the Board of Agriculture, which is announced to meet for the first time in the City of Toronto on the 2nd of July next.

* In the estimates for the current year, subsequently published, the sum of £1000 is recommended.

R. L. Denison, Treasurer, in Account with the Agricultural Association of Upper Canada.

Dr.

1850.	£	s.	d.
May 10, Balance in Bank of Upper Canada,	140	11	4
August, Grant of Midland District Agricultural Society, £25 0 0			
Township of Ingersoll, (Oxford.) 10 0 0			
Sept. Township of Bertie, (Welland.) 2 10 0			
Niagara District for 1849, 25 0 0			
Colborne, 10 0 0			
Norfolk, 20 0 0			
Oxford, 20 0 0			
Simcoe, 10 0 0			
Town of London, 10 0 0			
Middlesex, 25 0 0			
Lincoln, 28 12 0			
Thorold, 20 15 0			
Grantham, 6 5 0			
Gore District, 25 0 0			
York, 30 0 0			
	268	2	0
Parliamentary Grant,	600	0	0
Canada Company's Donation,	25	0	0
Members' Subscriptions,	198	10	0
Single admissions to Exhibition (non-members.)	356	18	1
Carriages, Horses, do. £4, Extra Entries, £8 18s. 3d.	12	18	3
Rent of two Booths,	55	15	0
Town of Niagara Subscription,	300	0	0
Donations—Mrs. McCormack, £1; Bissell & Hooker, 5s.,	1	5	0
Oct. Prizes obtained at Provincial Exhibition, Montreal,	33	5	0
Proceeds for Lumber, Casks, &c., used at show,	10	14	0
Proceeds for Butter, Cheese and flour,	8	0	3
Dec. 2 Debentures and Interest	31	16	0
1851.			
March. Mr. Thos. Wheeler, Toronto, Life Member's Subscription,	2	10	0
	£2045	4	11

Cr.

1850.	£	s.	d.
Sept. Mr. Barker's contract for Fencing, Pens, Booths, and Buildings for the Exhibition at Niagara,	269	10	0
Extras,	64	6	0
Paid per order of Local Committee for various items,	121	3	9
Balance on account of Public Dinner,	65	14	3
Superintendents of Departments, Clerks, &c., Stationery and Postage Expenses since January 1849,	76	7	5
Printing Bills, Premium Lists, Badges, Cards, &c., Ribbon and Calico,	75	10	6
Secretary, for services since 1848,	150	0	0
Treasurer,	50	0	0
Premiums, Niagara Show, 1850,	945	0	0
	£1817	11	11
Balance on hand, in Bank, June 10th 1851,	227	13	0
	£2045	4	11

June 10th, 1851,

We have examined these accounts and find them correct.

(Signed.) HENRY RUTTAN, ALEX. SHAW, GEO. BUCKLAND, } Auditors.

BOARD OF AGRICULTURE.

In the *Canada Gazeette* Extra, of June, 14th, the following Gentlemen were announded as having been elected members of the Board of Agriculture of Upper Canada, established by Act 13 and 14 Victoria, Cap. 73, viz:—

E. W. Thomson, Esq., of the Township of York.
Honorable Adam Fergsuson, of Woodhill.
Henry Ruttan Esq., of Cobourg.
R. L. Denison, Esq., of Toronto.
David Christie, Esq., of Brantford.
J. B. Marks, Esq., of Kingston.
John Harland, Esq., of Guelph.

[The Hon. Inspector General, and the Professor of Agriculture in the University of Toronto, (not yet appointed) are *Ex-officio* Members of the Board.]

The first meeting of the Board was summoned by the Provincial Secretary at the St. Lawrence Hall, in this city, on Wednesday, July 2nd, at Noon. Present, J. B. Marks, H. Ruttan, R. L. Denison, D. Christie and J. Harland.

Resolved;—That in consequence of the unavoidable absence of some Members of the Board, the question of a permanent Chairman for the year be deferred, and that J. B. Marks Esq. be Chairman *pro-tem.*

Resolved;—That Mr. G. Buckland be the Secretary of this Board.

Resolved;—That the thanks of the Board be communicated to Mr. Sheriff Treadwell, and W. McDougal Esq. for their communications.

Resolved;—That the thanks of the Board be given to Professor Nicol, for his valuable and appropriate donation of the *Transactions of the original British Board of Agriculture*, in 7 Vols. quarto, for the purpose of assisting in the formation of an Agricultural library.

The remainder of the day was spent in considering the provisions of the new Agricultural Bill now before Parliament. At 6 o'clock the Board adjourned to next day, at 10 A. M.

THURSDAY, July 3rd.

The Board met pursuant to adjournment at 10 A. M. when the Hon. Francis Hincks, Inspector General was present.

Various matters in reference to the future operations of the Board and the Procincial Association, were taken into consideration, more with a view of becoming better acquainted with these subjects than to an immediate action thereon.

Resolved; That the Board having received a communication from the Secretary of the Provincial Industrial Commission, stating that at a meeting of the Commissioners held on the 17th of June, they unanimously passed a resolution, that the sum of £25 given for the best 25 bushels of Wheat, the property of the Agricultural Association of Upper Canada. exhibited at Montreal, in October last, had been paid, in error, to the Treasurer of the Agricultural Association, and that the *grower* of the wheat was the only party fairly entitled to the same. That after such intimation of the decision of the Commission, this Board hereby instructs the Treasurer of the Agricultural Association to refund to the Ind'l Commission the whole amount received for prizes by the Agricultural Association, viz, £33 5s., less the expenses for freight and personal superintendence; the Board being of opinion that the principle laid down by the Commissioners in regard to the first prize for wheat applies equally to the third, and also to flour.

The Board desires to state further, that the Agricultural Association in sending articles for competition to the Provincial Exhibition at Montreal; articles which they had acquired by means of liberal prizes given at their last Annual Show, at Niagara, (for which they are greatly indebted to the liberality of the Canada Company,) were actuated solely by patriotic motives; and that the late misunderstanding would not have arisen, if the 3d published rule of the Commission had been fully expressed, or its conditions clearly defined.

The articles sent by the Agricultural Association for competition at the Industrial Exhibition, were described according to the form attached to the fourth printed regulation, with the names and residences of the respective producers; any omission, therefore, of such names in the descriptive prize lists issued by the Commission, cannot be fairly chargeable against the Agricultural Association.

In consequence of the wetness of the weather the Board deferred visiting the University grounds, and repaired to the Parliament Hous to make a further examination of the Agricultural Bill. A few modifications were agreed to. Adjourned to next day at 9 o'clock, to meet at the University.

FRIDAY,—July 4.

The Board proceeded this morning to inspect the University grounds, with a view to ascertain what portion of them would be the most suitable for an experimental farm. They were met and accompanied by the President and Professors Croft and Nicol. The opinion was unanimous, that the ground lying to the west of the ravine, was, on several accounts, the best adapted for the purpose. The soil varies materially from south to north, and the ground is, to a considerable extent clear of trees. The impression made on the Board by this inspection was quite favourable.

They afterwards repaired to the St. Lawrence Hall and reviewed their proceedings.

Resolved. That the following prizes be offer-

ed for the four best Agricultural County Reports, from the respective County Societies, to be sent in to the Secretary of the Board of Agriculture on or before the 1st of April, 1852. For the best report £20; Second £15; Third £10; Fourth £5.

A vote of thanks was passed to the Committee of the Commercial News Rooms, for the free use of one of their rooms to the Board.

After a vote of thanks to the Chairman, the Board adjourned to meet again on Tuesday the 4th of November next.

REGULATIONS AND PRIZE LIST

Of the Grand Provincial Exhibition, of the Agricultural Association of Upper Canada, to be held at Brockville, on September 24, 25, 26, 1851.

OFFICERS—1851.

President:
J. B. Marks, Esq., Kingston.

1st Vice President:
Thomas Clark Street, Esq., Niagara Falls.

2nd Vice President:
William Matthie, Esq., Brockville.

Ex-Presidents:
E. W. Thomson, Esq., Toronto.
Hon. Adam Fergusson, Woodhill.
H. Ruttan, Esq., Cobourg.

Treasurer: R. L. Denison, Esq., Toronto.
Secretary: George Buckland, Esq., Toronto.
Seedsman: Mr. James Fleming, Toronto.

THE BOARD OF AGRICULTURE,

Consisting of the following members, constitutes the Council of the Association, between the annual meetings thereof:—

Hon. Francis Hincks, Inspector General.
E. W. Thomson, Esq. Toronto.
Hon. Adam Fergusson, Woodhill.
Henry Ruttan, Esq., Cobourg.
R. L. Denison, Esq., Toronto.
David Christie, Esq. Brantford.
J. B. Marks, Esq., Kingston.
John Harland, Esq., Guelph.
R. Coleman, Junr., Esq.
H. Freeland, Esq.
George Morton, Esq.
D. B. O. Foord, Esq.
H. D. Jessup, Esq.
Allan Turner, Esq.
Doctor Reynolds.

LOCAL COMMITTEE AT BROCKVILLE.

Chairman: Geo. Crawford, Esq.,
Treasurer: James Crawford, Esq.,
Secretary: D. Wylie, Esq.,

George Sherwood, M. P. P., Esq.
J. L. McDonald, Esq.
Charles E. Jones, Esq.
Robert Watson, Esq.
Ogle R. Gowan, Esq.

RULES AND REGULATIONS.

Extract from the By-Laws of the Association:

The members of the Agricultural Societies of the several Townships within the County or United Counties, wherein the Annual Exhibition may be held, and the members of the Society of the said County or United Counties, shall be also members of the Association for that year, and have badges accordingly; provided the Agricultural Societies of the said Townships, or the Society of the said County or United Counties shall devote their whole funds for the year, including the Government grant, in aid of the Association; and that the office-bearers of the Societies of other Townships in other Counties, and the office-bearers of the Societies of such Counties as shall have made donations or shall have contributed towards the Provincial Show (in the case of Townships not less than £10, and in the case of Counties not less than £25,) for that year, shall also be furnished with badges of membership, and shall have free entry into the grounds of the Exhibition.

1st. The payment of 5s. and upwards constitutes a person a Member of the AGRICULTURAL ASSOCIATION OF UPPER CANADA for one year; and *Two Pounds Ten Shillings* for life when given for that specific object, and not as a contribution to the local funds.

2. No one but a member will be allowed to compete for prizes except in Classes Q, U, and X.

3. All Stock and Articles intended for Exhibition, must be entered in the Secretary's Books at Brockville, before 8 o'clock on *Tuesday evening*, the 23rd of September; if by letter the postage must be paid, and the person entering must remit 5s. being the amount of subscription constituting a member, and 7½d. extra for each article *above three*.

4th Members exhibiting more than *Three* Articles for competition to pay 7½d. extra on each.

5th. Badges from the Treasurer's Office will be furnished Members, which will admit them and their Ladies and children under 14 years of age in carriages, free to every department of the Exhibition, during the Show. Life Members admitted with their families *free*.

6th. Tickets for admission to those who are not members 7½d. each time of admission. Carriages including drivers 2s. 6d.; passengers to pay 7½d, each. Horsemen, not members, to pay 1s. 3d. each admission.

7th. Every article exhibited for competition, must be the growth, produce, or manufacture of Upper Canada, except Class X. Live Stock for breeding must be the property of persons residing in Upper Canada. All premiums for articles entered in competition are to be awarded to the *producers* only.

8th. Discretionary premiums will be awarded for such articles as may be considered worthy by the Judges, although not enumerated in the list, and the Committee will determine the amount of premium.

9th. In the absence of competition in any of the Classes, or if the Stock or Articles Exhibited be of inferior quality, the Judges will exercise their discretion as to the value of the premiums they award.

10th. The Judges, Competitors and Officers of the Association only will be permitted to enter the Show Grounds, until one o'clock, P. M., of Wednesday, the 24th September, at which hour members will be admitted. Non members will be admitted on *Thursday morning* at 8 o'clock.

11th. No Articles or Stock exhibited will be allowed to be removed from the grounds till the awards are made, or without the permission of the President, under the penalty of losing the Premiums. An Auctioneer will be on the spot after the premiums are announced, and every facility afforded for the transaction of business.

12th. Delegates, Judges and members of the Press are requested to report themselves at the Secretary's Office immediately on their arrival.

13th. The Judges to meet at the Secretary's Office on *Wednesday morning* at 9 o'clock precisely, to make arrangements for entering immediately upon their duties.

14th. The Secretary will receive entries in Toronto to Saturday September 13. Afterwards all communications should be addressed to him at Brockville.

15th. It being essential to the satisfactory working of the Exhibition that all articles be entered and forwarded in reasonable time; all such as arrive on *Wednesday morning* and not previously entered, will be charged an entrance fee of 2s. 6d. each. *All entries will positively close on Wednesday morning at 9 o'clock.* Articles arriving afterwards will be admitted into the Show grounds on payment of 7½d. each; but they will be entitled to compete only for *Discretionary premiums.*

16th. Arrangements will be made for Agricultural Lectures or discussions during the evenings of Wednesday and Thursday of the Show week.

17th. Every effort will be made for enabling the Treasurer to commence paying the Premiums *early on Friday morning.*

18th. A Ploughing Match will take place in the neighbourhood of Brockville, on *Friday*, to commence at 9 o'clock in the morning.

The Local Committee will make arrangements with Steamboat and Railway proprietors for the the transit of visitors and articles for the Show, at reduced rates; also with the Hotels and Boarding House keepers for accomodating visitors at their ordinary fixed charges. The town of Brockville being beautifully situated on the majestic St. Lawrence, is easily accessible in all states of the weather, by steamboats, and will afford, in connection with adjacent towns on both sides of the river, ample accommodation to visitors. The Thousand Islands may be mentioned among the many interesting attractions of the locality.

PREMIUMS.

AGRICULTURAL REPORTS OF COUNTIES.

	£	s.	d.
For the best County Report of the Agricultural Society of the County,	20	0	0
2d do.	15	0	0
3d do.	10	0	0
4th do.	5	0	0

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the various soils of the County; modes of farming; value of land; amount of tillage and average of crops; breeds of live stock; implements and machines in use: methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. All statistical information should be condensed as much as possible, and when practicable, put into a tabulated form. The main object of each report should be to afford any intelligent stranger that might read it, a concise, but yet *an adequately truthful* view of the Agricultural condition and industrial pursuits of the County.—While all unnecessary particulars are to be avoided in the preparation of these Reports, *completeness* should, as mach as possible, be constantly kept in view. The Reports must be sent in to the Secretary of the Board of Agriculture on, or before, the 1st of April 1852; and the premiums will be paid into the hands of the Treasurer of the respective County Societies, that may win the same. The Board will publish the whole,

or such parts of the Reports, as may be deemed expedient.

NOTICE.

The Secretary of the Board of Agriculture is instructed to announce that *The Canada Company* will offer the following prizes for the year 1852.

For the best 112lbs. of Flax,	£6 0
" 112lbs. Hemp,	4 0

CLASS A.—HORNED CATTLE.

Durhams.

Best Bull,	£7 10
2d do	4 0
3d do	2 0
Best 3 years old Bull,	6 0
2d do	3 10
3d do	1 10
Best 2 years old Bull,	5 0
2d do	3 0
3d do	1 10
Best Bull, 1 year old	4 0
2d do	2 0
3d do	1 0
Best Bull Calf of 1851,	2 10
2d do	1 10
3d do	1 0
Best Cow,	5 0
2d do	3 0
3d do	2 0
Best 3 year old Cow,	4 0
2d do	2 10
3d do	1 10
Best 2 year old Heifer,	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer,	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf of 1851,	1 10
2d do	0 15
3d do	0 10

CLASS B.—DEVONS.

Best Bull,	7 10
2d do	4 0
Best 2 year old Bull,	5 0
2d do	3 0
Best Bull, 1 year old,	4 0
2d do	2 0
Best Bull Calf of 1851,	2 10
2d do	1 10
Best Cow,	4 0
2d do	2 10
Best 2 year old Heifer,	3 0
2d do	2 0
Best 1 year old Heifer,	2 10
2d do	1 10
Best Heifer Calf of 1851	1 10
2d do	0 15

CLASS C.—HEREFORDS.

Best Bull,	7 10
2d do	4 0
Best 2 year old Bull,	5 0
2d do	3 0
Best Bull, 1 year old,	4 0
2d do	2 0
Best Bull Calf of 1851,	2 10
2d do	1 10
Best Cow,	4 0
2d do	2 10
Best 2 year old Heifer,	3 0
2d do	2 0
Best 1 year old Heifer,	2 10
2d do	1 10
Best Heifer Calf of 1851,	1 10
2d do	0 15

CLASS D.—AYRSHIRES

Best Bull,	£7 10
2d do	4 0
3d do	2 0
Best 2 year old Bull,	5 0
2d do	3 0
3d do	1 10
Best Bull, 1 year old,	4 0
2d do	2 0
3d do	1 0
Best Bull Calf of 1851,	2 10
2d do	1 10
3d do	1 0
Best Cow,	4 0
2d do	2 10
3d do	1 10
Best 2 year old Heifer,	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer,	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf of 1851,	1 10
2d do	0 15
3d do	0 10

A certificate of pedigree will be required for all the above animals to show that they are either imported thorough bred stock, or bred in the country from such stock, and the name and residence of the *Breeder* are to be inserted.

CLASS E.—GRADE CATTLE.

Best Cow,	£4 0
2d do	2 10
3d do	1 10
Best 3 year old Cow,	3 5
2d do	2 5
3d do	1 5
Best 2 year old Heifer,	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer,	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf of 1851,	1 10
2d do	0 15
3d do	0 10

A certificate to be produced to show the breeding of animals in Class E.

FAT CATTLE—ANY BREED.

Best Ox or Steer,	£3 0
2d do	2 0
3d do	1 0
Best Cow or Heifer,	3 0
2d do	2 0
3d do	1 0
Best Yoke of Working Oxen,	3 0
2d do	2 0
3d do	1 0

No animal entitled to compete for a premium in more than one of the foregoing classes.

CLASS F.—HORSES.

Best Stallion for Agricultural purposes	£7 10
2d do	5 0
3d do	2 10
Best Heavy Draught Stallion,	7 10
2d do	5 0
3d do	2 10
Best 3 year old Stallion	5 0
2d do	3 0
3d do	1 0
Best 2 year old Stallion	3 0
2d do	2 0
3d do	1 0
Best 2 year old Gelding or Filly,	3 0
2d do	2 0
3d do	1 0
Best Span Matched Carriage Horses,	4 0
2d do	3 0
3d do	1 0
Best Span Draught Horses,	4 0
2d do	3 0
3d do	1 0
Best Brood Mare and Foal, or evidence that the foal has been lost,	5 0
2d do	3 0
3d do	1 0
Best Saddle Horse,	2 0
2d do	1 10
3d do	1 0

CLASS G.

Best thorough bred Stallion,	£5 0
2d do	3 0
3d do	1 0
Best thorough bred Stallion 3 years old,	5 0
2d do	3 0
3d do	1 0
Best thorough bred 2 year old Gelding or Filly,	3 0
2d do	2 0
3d do	1 0
Best thorough bred Mare and Foal,	5 0
2d do	3 0
3d do	1 0

Pedigree to be produced.

CLASS H.—SHEEP.

Leicesters.

Best ram, two shears and over,	£4 0
2d do	2 0
3d do	1 0
Best shearling Ram,	2 10
2d do	1 10
3d do	15
Best Ram Lamb,	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, 2 shears and over,	4 0
2d do	3 0
3d do	1 10
Best 2 shearling Ewes,	3 0
2d do	2 0
3d do	1 0
Best two Ewe Lambs,	1 10
2d do	1 0
3d do	0 10

SOUTH DOWNS.

Best Ram, 2 shears and over	£4 0
2d do	2 0
3d do	1 0
Best shearling Ram,	2 15
2d do	1 10
3d do	10
Best Ram Lamb,	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, 2 shears and over,	4 0
2d do	3 0
3d do	1 10
Best 2 shearling Ewes,	3 0
2d do	2 0
3d do	1 0
Best 2 Ewe Lambs,	1 10
2d do	1 0
3d do	0 10

MERINOS OR SAXONS.

Best Ram, 2 shears and over	£4 0
2d do	2 0
3d do	1 0
Best shearling Ram,	2 10
2d do	1 10
3d do	15
Best Ram Lamb,	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, 2 shears and over,	4 0
2d do	2 0
3d do	1 0
Best shearling 2 Ewes,	3 0
2d do	2 0
3d do	1 0
Best 2 Ewe Lambs,	1 10
2d do	1 0
3d do	10

FAT SHEEP.

Best 2 Fat Whethers,	£3 0
2d do	2 0
3d do	1 0
Best 2 Fat Ewes,	3 0
2d do	2 0
3d do	1 0

CLASS I.—PIGS.

Best Boar, 1 year and over,	£3 0
2d do	2 0
3d do	1 0
Best Breeding Sow, 1 year and over,	3 0
2d do	2 0
3d do	1 0
Best Boar of 1851,	2 0
2d do	1 10
3d do	1 0
Best Sow of 1851,	2 0
2d do	1 10
3d do	1 0

In this class the precise age of the animals is to be stated on the cards.

CLASS J. AGRICULTURAL IMPLEMENTS.

Best Wooden Plough,	£2 0
2d do	1 10
3d do	1 0
Best Iron Plough,	2 0
2d do	1 10
3d do	1 0
Best Subsoil Plough	2 0
2d do	1 10
3d do	1 0
Best pair of Harrows,	1 0
2d do	0 15
3d	0 10

Best Fanning Mill,	1 10
2d do	1 0
3d do	0 10
Best Horse Power Thrasher and Seperator,	5 0
2d do	3 0
3d do	2 0
Best Grain drill,	3 0
2d do	2 0
3d do	1 0
Best Seed Drill or Barrow.	1 0
2d do	0 15
3d do	0 10
Best Straw Cutter,	1 0
2d do	0 15
3d do	0 10
Best Smut Machine,	1 10
2d do	0 15
Best Portable Grist Mill,	3 0
2d do	2 0
3d do	1 0
Best Grain Cracker,	2 0
2d do	1 10
3d do	1 0
Best Corn and Cob Crusher,	1 0
2d do	0 15
3d do	0 10
Best machine for cutting Roots for Stock	1 10
2d do	1 0
3d do	0 10
Best Clover Machine	2 0
2d do	1 5
3d do	0 10
Best 2 Horse Waggon,	3 0
2d do	2 0
3d do	1 0
Best Horse Cart,	1 10
2d do	1 0
3d do	0 10
Best Horse Rake,	1 0
2d do	0 15
3d do	0 10
Best Metal Roller,	2 0
Best Wooden Roller,	1 5
Best Reaping Machine,	5 0
2d do	3 0
3d do	2 0
Best Stump Extractor,	2 0
2d do	1 0
3d do	0 10
Best Mowing Machine,	5 0
2d do	3 0
3d do	2 0
Best Potato Digger,	0 15
2d do	0 10
5d do	0 5
Best Thistle Extractor,	0 10
2d do	0 5
Best Farm Gate,	0 15
2d do	0 10
3d do	0 5
Best Cultivator,	1 10
2d do	1 0
3d do	0 10
Best Machine for making Drain Tiles,	2 10
2d do	1 10
Best Brick-making Machine,	2 10
2d do	1 10
Best set of Horse Shoes,	15
2d do	10
3d do	5
Best half-dozen Hay Rakes,	10
2d do	7
3d do	5
Best half-dozen narrow Axes,	15
2d do	10
3o do	5
Best half-dozen Manure Forks,	15
5d do	10
3d do	5
Best half-dozen Hay Forks,	15
2d do	10
3d do	5
Best half-dozen Scythe Snaiths,	15
2d do	10
3d do	5
Best Ox Yoke and Bows.	15
2d do	10
Best Grain Cradle,	10
2d do	5
Best half-dozen Grain Shovels, wood,	15
2d do	10
3d do	5
Best half-dozen Iron Shovels	15
2 do	10
3 do	5

CLASS K.—DOMESTIC MANUFACTURES.

Best 1 Horse Pleasure Carriage,	£2 0
2d do	1 10
3d do	0 10
Best 2 horse pleasure Carriage,	2 0
2d do	1 10
3d do	0 15
Best set of Farm Harness,	1 10
2d do	1 0
3d do	0 10
Best set of Pleasure Harness,	1 10
2d do	1 0
3d do	0 10
Best Saddle and Bridle,	1 0
do do	0 15
Best Travelling Trunk,	1 10
2d do	0 10
3d do	0 5
Best side of Sole Leather,	0 10
2d do	0 15
3d do	0 5
Best side of Upper Leather,	0 15
2d do	0 10
3d do	0 5
Best Skirting Leather,	15
2d do	10
3d do	5
Best Calf Skin, Dresssed,	0 15
2d do	0 10
3d do	0 5
Best side of Harness Leather,	0 15
2d do	0 10
3d do	0 6
Best 4 or 6 Pannelled Door,	0 15
2d do	0 10
3d do	0 5
Best Fur Hat,	0 15
2d do	0 10
3d do	0 5
Best Window Sash, 12 lights, hung in frame	0 15
2d do	0 10
3d do	0 5
Best Fur Cap,	0 15
2d do	0 10
3d do	0 5
Best Fur Sleigh Robe,	0 15
2d do	0 10
3d do	0 5

Best specimen Bootmaker's work,	0 15
2d do	0 10
3d do	0 5

CLASS L.—WOOLLEN AND FLAX GOODS.

Best piece of not less than 12 yards of Woollen Carpet,	£2 0
2d do	1 0
3d do	0 10
Best 12 yards, or over, Oil Cloth,	1 0
2d do	0 10
3d do	0 5
Best pair of Woollen Blankets,	2 0
2d do	1 0
3d do	0 10
Best Counterpane,	1 0
2d do	0 15
3d do	0 10
Best piece 12 yards Flanel,	1 0
2d do	0 15
3d do	0 10
Best piece Satinett, 12 yards,	1 0
2d do	0 15
3d do	0 10
Best piece Broad Cloth, from Canadian Wool,	2 0
2d do	1 0
3d do	0 10
Best piece Flannel, 10 yards, not factory make,	0 15
2d do	0 10
3d do	0 5
Best piece Winter Tweed 12 yards,	1 0
2d do	0 15
3d do	0 10
Best piece Fulled Cloth, 10 yards not factory made,	0 15
2d do	0 10
3d do	0 5
Best Shawls, not Factory made,	0 15
2d do	0 10
3d do	0 5
Best piece Linen Goods,	0 15
2d do	0 10
3d do	0 5
Best samples of Flax or Hemp Cordage, not less than 28 lbs.	0 15
2d do	0 10
3d do	0 5
Best 50 pounds of Hemp,	1 5
2d do	15
3d do	10
Best 50 pounds flax,	2 0
2d do	1 0
3d do	0 10
12 best Linen Bags manufactured from Flax growth of Canada,	1 0
2d do	0 15
3d do	0 10

CLASS M.—DAIRY PRODUCTS, AND SUGAR.

Best Firkin of Butter not less than 56lbs	2 10
2d do	1 10
3d do	1 0
Best cheese not less than 30lbs,	2 0
2d do	1 10
3d do	1 0
Best 2 Stilton cheese not less than 14lbs each,	2 10
2d do	1 10
3d do	1 0

The cheese in both cases to be the make of 1851.

Best Butter, not less than 20lbs in Firkins Crocks or Tubs,	1 10
2d do	1 0
3o do	0 10
Best 30lbs Maple Sugar,	1 0
2d do	0 10
3d do	0 5
Best 30lbs Beet Root Sugar,	1 0
2d do	0 10
3d do	0 5
Best 20lbs Corn Stalk Sugar,	0 15
2d do	0 10
3d do	0 5
Best Sugar made by Indians,	0 15
2d do	0 10
3d do	0 5

CLASS N.—CABINET WARE &C.

Best Side Board	£3 0
2d do	2 0
3d do	1
Best Veneers from Canadian wood	1 0
2d do	15
3d do	10
Best specimen of Sawed Pine,	10
do Black Walnut,	10
do Oak,	10
do Curled Maple,	10
do Butter-nut	10

In plank not less than 6 feet long, 12 inches wide and 2 inches thick, one side plain (not varnished) the other rough.

Best specimen of graining wood,	1 10
2d do	1 0
3d do	0 10
Best Centre Table,	1 0
2d do	0 15
3d do	0 10
Best Dining Table,	1 0
2d do	0 15
3d do	0 10
Best Easy Arm Chair,	0 15
2d do	0 10
3d do	0 5
Best Sofa,	3 0
2d do	1 10
3d do	1 0
Best 6 Dining Room Chairs,	1 5
2d do	1 0
3d do	0 10
Best 6 Drawing Room Chairs,	1 15
2d do	1 0
3d do	0 15
Best Ottoman,	1 0
2d do	0 15
3d do	0 10
Best Work Box,	0 10
2d do	0 5
Best Writing Desk,	0 10
2d do	0 5
Stuffed Birds,	1 0
2d do	0 10
Picture Frame, gilt,	1 0
2d do	0 10
Picture Frame, veneered,	1 0
2d do	0 10
Stucco Moulding,	1 0
2d do	0 10
Stained Glass,	1 0
2d do	0 10
Dentistry, Diploma and	1 0
2d do	0 10

Best Collection of Canadian Minerals, named,	1 10
2d	15

CLASS O.

AGRICULTURAL PRODUCTIONS.

The Canada Company's Prize of £25.

For the best 25 bushels of *Fall Wheat*, the produce of Canada West, being the growth of the year 1851. The prize to be awarded to the actual *grower* only of the Wheat, which is to be given up to, and become the property of, this Association, for distribution to the County Societies for seed.

	£	s.	d.
2d do	10	0	0
3d do	5	0	0

The winners of the 2nd and 3rd premiums will retain the wheat. Exhibitors in this class will be required to state the nature of the soil, mode of preparation, time of sowing, amount of produce per acre, and the kind and quantity of manure applied. Exhibitors in this class will not be allowed to compete for premiums offered for wheat, consisting of 2 bushels, as follows.

Best 2 bushels Winter Wheat,	£2 10
2d do	1 15
3d do	1 5
Best 2 bushels of Spring Wheat,	2 10
2d do	1 15
3d do	1 5
Best 2 bushels Barley,	1 10
2d do	1 0
3d do	10
Bes 2 bushels Rye,	1 10
2d do	1 0
3d do	10
Best 2 bushels of Oats,	1 10
2d do	1 0
3d do	10
Best 2 bushels of Peas,	1 10
2d do	1 0
3d do	10
Best 2 bushels of Marrowfat Peas,	1 10
2d do	1 0
2d do	10
Best 2 bushels Indian Corn in the ear,	1 10
3d do	1 0
3d do	
Best bushel of Timothy Seed,	1 5
2d do	15
3d do	10
Best bushel of Clover Seed,	2 0
2d do	1 5
3d do	15
Best bushel Hemp Seed,	1 5
2d do	15
3d do	10
Best bushel Flax Seed,	2 0
2d do	1 5
3d do	15
Best bushel Mustard Seed,	1 0
2d do	15
3d do	10
Best Swedish TurnipSeed, not less than 10 lbs.,	15
2d do	10
3d do	5
Best bale of Hops, not less than 112 lbs.,	2 10
2d do	1 10
3d do	1 0
Best 2 bushels Potatoes,	15
2d do	10
3d do	5
Best 2 bushels Swede Turnips,	15
2d do	10
3d do	5
Best 2 bushels Red Carrots,	15
2d do	10
3d do	5
Best 2 bushels White or Belgian Carrots,	15
2d do	10
3d do	5
Best 2 bushels Mangel Wurzel, (Long-red,)	15
2d do	10
3d do	5
Best 2 bushels Yellow Globe Mangel Wurzel,	15
2d do	10
3d do	5
Best 12 roots of Khol Rabi,	10
2d do	5
Best bushel of Sugar Beet,	15
2d do	10
3d do	5
Best 2 bushels of Parsnips,	15
2d do	10
3d do	5
Best 20 lbs. manufactured Tobacco, growth of Canada West,	1 0
2d do	10
Best Broom Corn Brush, 28 lbs.,	1 0
2d do	15
3d do	10

HORTICULTURAL PRODUCTS.

Best 20 varieties of Apples, named	£0 15 0
2d do	10 0
3d do	5 0
Best 12 Table apples	10 0
2d do	7 6
3d do	5 0
Best 12 Winter Apples	10 0
2d do	7 6
3d do	5 0
Best and greatest variety of Pears	15 0
2d do	10 0
3d do	5 0
Best 12 Table Pears	10 0
2d do	7 6
3d co	5 0
Best 12 Winter Pears	10 0
2d do	7 6
3d do	5 0
Best dozen Plums (Dessert)	10 0
2d do	7 6
3d do	5 0
Best 12 baking Plums	10 0
2d do	7 6
3d do	5 0
Best 12 Peaches, grown in hot house,	10 0
2d do do	7 6
3d do do	5 0
Best 12 do do grown in open air	10 0
2d do do	7 6
3d do do	5 0
Best collection of Peaches grown in open air	10 0
2d do do	7 6
3d do do	5 0
Best Grapes, grown in hot house,	10 0
2d do do	7 6
3d do do	5 0

Best Grapes grown in open air	10	0	
2d do do	7	6	
3d do do	5	0	
Best Black Grapes grown in open air	10	0	
2d do do	7	6	
3d do do	5	0	
Best White Grapes grown in open air	10	0	
2d do do	7	6	
3d do do	5	0	
Best two Pumpkins	10	0	
2d do	7	6	
3d do	5	0	
Best 4 Squash	10	0	
2d do	7	6	
3d do	5	0	
Best 12 Tomatoes	10	0	
2d do	7	6	
3d do	5	0	
Best 4 heads Broccoli,	10	0	
2d do	7	6	
3d do	5	0	
Best 4 heads Cauliflower	10	0	
2d do	7	6	
3d do	5	0	
Best 4 heads Cabbage summer	10	0	
2d do	7	6	
3d do	5	0	
Best 4 heads Cabbage winter	10	0	
2d do	7	6	
3d do	5	0	
Best 12 Carrots for Table	10	0	
2d do do	7	6	
3d do do	5	0	
Best 12 Roots of White Celery	10	0	
2d do do	7	6	
3d do do	5	0	
Best 12 Roots Red Celery	10	0	
2d do do	7	6	
3d do do	5	0	
Best dozen Capsicums	10	0	
2d do do	7	6	
3d do do	5	0	
Best 6 Egg Plants	10	0	
2d do do	7	6	
3d do do	5	0	
Best 12 Blood Beets	10	0	
2d do do	7	6	
3d do do	5	0	
Best peck of White Onions	10	0	
2d do do	7	6	
3d do do	5	0	
Best peck of Yellow Onions	10	0	
2d do do	7	6	
3d do do	5	0	
Best peck of Red Onions	10	0	
2d do do	7	6	
3d do do	5	0	
Best 12 Roots of Salsify	10	0	
2d do do	7	6	
3d do do	5	0	
Best half bushel White Turnips	10	0	
2d do do	7	6	
3d do do	5	0	
Best peck of White Beans	10	0	
2d do do	7	6	
3d do do	5	0	
Best dozen Dahlias, named,	10	0	
2d do do	7	6	
3d do do	5	0	
Best Bouquet Cut Flowers	10	0	
2d do do	7	6	
3d do do	5	0	
Best collection Green House Plants, not less than 12 specimens,	1	0	0
2d do do		15	0
3d do do		10	0
Best collection of Annuals in bloom		10	0
2d do do		7	6
3d do do		5	0
Best Floral Ornament	1	0	0
2d do do		15	0
3d do do		10	0
Best Canada Coffee 12 lbs.		10	0
2d do do		7	6
3d do do		5	0
Best Water Melon		10	0
2d do		7	6
3d do		5	0
Best Musk Melon of any sort		10	0
2d do		7	6
3d do		5	0

CLASS P. IRON AND HOLLOW WORKS.

Cooking Stove with furniture	£1	10	0
2d do	1	0	0
3d do		10	0
Best Parlor Stove	1	0	0
2d do		10	0
3d do		5	0
Best System of Ventilating buildings, with Model and Description, Diploma, and	2	0	0
2d do do do	1	0	0
Best Balance Scales	1	0	0
2d do		15	0
3d do		5	0
Best Model Hot Air Apparatus	1	10	0
2d do do		15	0
Best Steaming Apparatus for Feeding Stock	1	10	0
2d do do do	1	0	0
Best Set of Cooper's Tools		15	0
2d do		10	0
Best Set of Bench Planes		15	0
2d do		10	0
Best half-dozen Corn Brooms		10	0
2d do do		5	0
Best dozen Broom Handles turned		10	0
2d do		5	0
Best specimen Willow Ware		10	0
2d do		5	0
Best dozen Flour barrels	1	0	0
2d do		10	0
Best Wooden Pail		5	0
2d do		3	9
Best Wash Tub		7	6
2d do		5	0
Best Washing Machine		10	0
2d do		5	0
Best pair of Hames		10	0
2d do		5	0
Best Saddle tree		10	0
2d do		5	0
Best Weaver's Reeds		10	0
2d do		5	0
Best Board Rule		10	0
2d do		5	0
Best Spinning Wheel		10	0
2d do		5	0
Best dozen Wheel Heads		15	0
2d do		10	0
Best Churn		15	0
2d do		10	0

Best Augurs from ½ to 2 inches		10	0
2d	do	5	0
Best Earth Augur		10	0
2d	do	5	0
Best specimen 20 lbs Cut Nails		10	0
2d	do	5	0
Best Blacksmith's Bellows		1 5	0
2d	do	15	0
Best Model Beehive		10	0
2d	do	5	0
Best Rifle		15	0
2d	do	10	0
Best Bundle Shingles sawed		10	0
2d	do do	5	0
Best	do do split	10	0
2d	do do	5	0

CLASS Q.—LADIES' DEPARTMENT.

Best specimen of Crochet Work	£1	0	0
2d do do		15	0
3d do do		10	0
Best specimen of Woollen or Cotton Netting		15	0
2d do do		10	0
3d do do		7	6
Best specimen Fancy Netting		15	0
2d do do		10	0
3d do do		7	6
Best specimen of Fancy Knitting		15	0
2d do do		10	0
3d do do		7	6
Best specimen of Embroidery	1	0	0
2d do do		15	0
3d do do		10	0
Best Specimen Raised Worsted Work	1	0	0
2d do do		15	0
3d do do		10	0
Best specimen of Wax Fruit		15	0
2d do do		10	0
3d do no		5	0
Best specimen of Wax Flowers		15	0
2d do do		10	0
3d do do		5	0
Best pair Woollen Socks		10	0
2d do do		7	6
3d do do		5	0
Best pair of Woollen stockings		10	0
2d do do		7	6
3d do do		5	0
Best pair Woollen Mittens		10	0
2d do do		7	6
3d do do		5	0
Best pair Woolen Gloves		10	0
2d do do		7	6
3d do do		5	0
Best Straw Hat of Canadian Straw		10	0
2d do do		7	6
3d do do		5	0
Best specimen of Gentlemen's shirts		15	0
2d do do		10	0
3d do do		5	0
Best specimen of Quilts	1	5	0
2d do do	1	0	0
3d do do		15	0

CLASS R.—FINE ARTS.

In Oil.

Historical painting, Canadian subject, Diploma and	£3	0	
2d best,	2	0	
Landscape, Canadian subject. Diploma and	3	0	
2d best,	2	0	
Animals (grouped or single) Diploma and	3	0	
2d best,	2	0	
Portrait—Diploma and	2	10	
2d best,	1	10	

In Water Colors.

Landscape, Canadian subject, Diploma and	2	10	
2d best,	1	10	
Portrait, Diploma and	2	0	
2d best,	1	0	
Animals, (grouped or single), Diploma and	2	10	
2d best,	1	10	
Miniature, Diploma and	2	0	
2d best,	1	10	
Flowers, Diploma and	1	10	
2d best,	1	0	

Pencil and Crayon.

Pencil Portrait, Diploma and	1	10	
2d best,	1	0	
Crayon Portrait, Diploma and	1	10	
2d best,	1	0	
Pencil Drawing, Diploma and	1	10	
2d best,	1	0	
Crayon do Diploma and	1	10	
2d best,	1	0	
Coloured Crayon, Diploma and	1	10	
2d best,	1	0	
Daguerreotype best collection, the exhibitor to have operated in Canada West for the last 12 months, Diploma and	1	10	
2d best,	1	0	
Lithographic drawing unprinted, Diploma and	1	10	
2d best,	1	0	
Wood engraving, Diploma and	1	10	
2d best,	1	0	
Engraving on Copper, Diploma and	1	10	
2d best,	1	0	
Engraving on steel, Diploma and	1	10	
2d best,	1	0	
Ornamental Writing, Diploma and	1	0	
2d best,	0	10	

All articles in Q and R exhibited by *Ladies* to be admitted *free*. All articles entered in R must have been executed since the last Exhibition of this association.

CLASS S.—POTTERY.

Best specimen Pottery,	1	0	
2d do	0	15	
3rd do	0	10	
Best specimen draining Tile	1	0	
2d do	0	15	
3rd do	0	10	
Best dozen Bricks,	0	10	
2d do	0	5	

CLASS T.—BOOKBINDING, PAPER, &c.

Best specimen Bookbinding,	£1		
2d do	0	15	
3d do	0	10	
Best ream of Writing Paper,	1	0	
2d do	0	15	
3d do	0	10	
Best ream of Printing Paper,	1	0	
2d do	0	15	
3d do	0	10	
Best specimen Letter Press Printing, executed since last Exhibition,	2	10	
2d do	1	10	
3d do	1	0	

CLASS U.—INDIAN PRIZES.

Best Bark Canoe,	£1 10
2d do	0 10
Best 4 Paddles,	0 15
2d do	0 5
Best Indian Cradle,	0 15
2d do	0 10
Best pair Snow Shoes, (Common size)	0 15
2d do	0 10
Best pair Snow Shoes, (8 inches long)	0 10
2d do	0 5
Best Tobacco Pouch worked with Porcupine Quills.	0 5
2d do	0 3
Best Pipe of Peace	0 15
2d do	0 10
Best Pipe of War	0 15
2d do	0 10
Best pair of Moccasins (plain)	0 5
2d do	0 3
Best pair Moccasins (worked with Porcupine Quils	0 7
2d do	0 5
Best pair Moccasins (worked with Beads)	0 7
2d do	0 5
Best Fruit Basket	0 7
2d do	0 5
Best Clothes Basket	0 7
2d do	0 5
Best Hand Basket	0 7
2d do	0 5

All Articles exhibited by Indians, admitted free.

CLASS V.—PLOUGHING MATCH.

Best Ploughman over 18 years of age	£4 0
2d do	3 0
3d do	2 0
4th do	1 0
Best Ploughman under 18 years of age	4 0
2d do	3 0
3d do	2 0
4th do	1 0

CLASS W.—POULTRY.

Best pair Dorking Fowls,	£0 10
2d do	0 5
Best pair of Poland Fowls,	0 10
2d do	0 5
Best pair large breed fowls,	0 10
2d do	0 5
Best pair Turkeys,	0 10
2d do	0 5
Best pair Large Geese,	0 10
2d do	0 5
Best pair Topknot Ducks,	0 10
2d do	0 5
Best pair Muscovy Ducks,	0 10
2d do	0 5
Best pair Common Ducks,	0 10
2d do	0 5
Best pair Guinea Fowls,	0 10
2d do	0 5
Best lot Poultry owned by Exhibitor,	0 10

CLASS X.—GENERAL CLASS.

(*Foreign*)

Pemiums for Stock belonging to persons residing out of *Upper Canada*. Exhibitors in this class pay neither member's nor *Entry* fees.

Best Durham Bull not over five years—Diploma and	£2 10
2d do	2 10
Best Durham Cow Diploma and	1 10
2d do	1 10
Best Ayrshire Bull Diploma and	2 10
2d do	2 10
Best Ayrshire Cow Diploma and	1 10
2d do	1 10
Best Hereford Bull Diploma and	2 10
2d do	2 10
Best Hereford Cow Diploma and	1 10
2d do	1 10
Best Devon Bull Diploma and	2 10
2d do	2 10
Best Devon Cow Diploma and	1 10
2d do	1 10
Best Stallion for Agricultural purposes, Diploma and	3 0
2d do	3 0
Best Blood Stallion Diploma and	3 0
2d do	3 0
Best Leicester Ram Diploma and	1 10
2d do	1 10
Best 2 Leicester Ewes Diploma and	1 10
2d do	1 0
Best Southdown Ram Diploma and	1 10
2d do	1 0
Best 2 Southdown Ewes Diploma and	1 10
2d do	1 0
Best Merino and Saxon Ram Dip. and	1 10
2d do	1 0
Best 2 Merino or Saxon Ewes Dip. and	1 10
2d do	1 0

AGRICULTURAL IMPLEMENTS.

Best Plough Diploma and	£1 0
" Subsoil Plough, Diploma and	1 0
" pair Harrows.	1 0
" Fanning Mill Diploma and	1 0
" Horse Power Thrasher and Separator— Diploma and	2 10
" Seed Drill or Barrow, do and	1 0
" Straw Cutter,	1 0
" Smut Machine,	1 0
" Portable Grist Mill, Diploma and	2 10
" Grain Cracker	1 10
" Machine for Cutting Roots for Stock,	1 0
" Corn and Cob Crusher,	1 0
" Clover Machine, Diploma and	2 0
" Reaping Machine do and	2 10
" Cultivator, do and	1 5
" Assortment of Agricultural Implements and Edge Tools, Diploma and	0 5

THE CYPRESS TREE OF PALESTINE. — It was formerly a custom among the Syrians to bury their dead without the walls of their cities: and at the hour when the body of the deceased was lowered into its solemn resting place, a cypress tree was planted at the head of the grave by the nearest relation of the deceased, and he conceived it to be his duty ever after to furnish for it a copious supply of pure water and rich soil. The tree was visited weekly by the one who planted it, and often by the whole family, who there performed their religious rites. Thus it is that the cypress trees in that country are so numerous and grow to such an amazing size, some of them being one hundred and twenty feet in height.—As their dark foliage overshadows the tombs of the departed, they furnish a welcome resting place for the wearied traveller, and present a pleasing contrast to the otherwise bright and joyous scenery of the Holy Land.

AGRICULTURAL SONG.

BY JOHN PALMER.

Plough deep to find the gold, my boys!
Plough deep to find the gold!
The earth hath treasure in her breast
Unmeasured and untold.

Clothe the mountain tops with trees,
The sides with waiving grain!
Why bring over stormy seas
What here we may obtain?

O, Brtain need not bring her bread
From countries new or old,
Would she but give the ploughshare speed,
And depth to find the gold!

Earth is grateful to her sons
For all their care and toil;
Nothing yields such large returns
As drained and deepened soil.

Science, lend thy kindly aid,
Her riches to unfold;
Moved by plough or moved by spade,
Stir deep to find the gold!

Dig deep to find the gold, my boys!
Dig deep to find the gold!
The earth has treasures in her breast
Unmeasured and untold.

THE NATIVE JAM BERRY.—(Alluding to the wild gooseberry, described by our Amherstburg correspondent as "a strong growing bush, with long pendant branches, free from prickles, and bearing a very small red berry which falls as soon as ripe," the writer of the following letter states that he cultivates it and goes on to say:) Plucked just before ripening it makes a delicious preserve with a rich wild flavour, and is, in my opinion, far superior for that purpose to the garden jam berry. When residing in another part of the country, where it was found plentifully, it was a great favourite, and much used for preserves. It is found frequently in the vicinity of beaver meadows, and is a prolific bearer. The berries are distributed along pendant branches, and, before ripening, have a delicate bloom. I observe two distinct species among those that ripened their fruit this year with us—a red and white variety. Some attention should be paid to the fruit, as no doubt it is susceptible of improvement, and might, by cultivation, be increased in size. Of this be assured, that as a free grower and ready bearer, it is invaluable as a jam berry; while its delicious flavour when preserved places it far above the garden varieties for that purpose. I am glad to find that the attention of your correspondent has been called to hybridizing and hope he will be successful. Doubtless hardy varieties may thus be obtained. While on the subject, it occurred to me that a friend lately mentioned his having discovered growing in a swamp a large well-flavoured variety of the wild gooseberry. He described it as being a smooth berry, and as large as the ordinary garden varieties. I sometime ago sent a request to him to procure me a few plants, and should he do so you shall hear farther on the subject. By the way has your correspondent's attention ever been directed to the wild currant? I have noticed three varieties, dark, brownish, and red berries, prickly, and of an unpleasant flavour. There is also occasionally to be found in marshy ground, a black berry of fair size and well-flavoured. The leaf exactly resembles the garden black currant; but it does not emit the peculiar smell of the garden fruit. Probably they are not worthless; but many of the native plants may be useful for the purpose of securing hardy varieties.—*Montreal Witness.*

REMEDY FOR BURNS.—*Very Simple—Flour Relieves the Suffering.*—Dr. Reese, physician of Bellevue Hospital, New York, has been making experiments concerning the best mode of healing burns and scalds, and checking the acute sufferings. He has found that flour, thrown on with a common dredging box, is one of the best and most efficient remedies yet discovered. The external air is one of the chief causes of the suffering, and flour thus applied, both heals and closes the wounds to the atmosphere. The edges of the wounds which remain open, he dressed with lime water and oil applied by a feather. Dr. Reese says the above application made to wounds by fire, hot water, gunpowder, &c., has been most happy in the practice at the Hospital.

BEAT THIS WHO CAN.—We have been presented by Mr. Thomas of Belleville nursery, with three stalks of Rhubarb, weighing *three and a half pounds*, and each stalk measures *three feet!* What do you think of that brother Jonathan? We recommend epicures to give Mr. Thomas a call. —*Intelligencer.*

ON THE PRODUCE OF BEES.—It is estimated by persons of learning, that the pasture of Scotland could maintain as many bees as would on an average produce 80,000,000 quarts of honey, and 1,000,000 pounds of wax. Were this quantity tripled for England and Ireland, the produce of the empire would be 240,000,000 quarts of honey and 3,000,000 pounds of wax annually. The income that would thus arise from honey, at the very moderate price of 2s. 6d. per quart would amount to £3,000,000 sterling, and the wax at 1s. 6d. per pound would produce £225,000 sterling. The rearing of bees must therefore appear to be an object worthy of the consideration of all who feel a welfare in their country.

SIMPLE CURE FOR CROUP.—When a child is taken with croup, instantly apply cold water, (ice water if possible,) suddenly and freely to the neck and chest with a sponge. The breathing will almost instantly be relieved. So soon as possible, let the sufferer drink as much as he can; then wipe it dry, cover it up warm, and soon a quiet slumber will relieve the parent's anxiety, and lead the heart in thankfulness to the Power which has given to the pure gushing fountain such medical qualities.—*American Agriculturist.*

WHEN has a man a right to scold his wife about his coffee? When he has sufficient *grounds.*

English Emigration to New Brunswick.

We learn that information has been received by an official gentleman of this city, of the intention of a large body of Englishmen to emigrate to this Province the present season, if the arrangements for the construction of the Halifax and Quebec Railway are completed in sufficient time. So soon as it is ascertained that the work is positively to go on, in all probability ten thousand persons of English birth, will embark for this Colony, one half of whom will land at the ports on the Gulf, with the view of seeking favourable locations on the line of the Railway. We understand that all these intending emigrants are possessed of means, the humblest among them able to bring £500 Sterling, while many will bring £5,000, or more. They will be accompanied by persons of capital, who propose to establish on the line of the Railway, mills, factories and work-shops, not only for the construction of the necessary locomotives, carriages and trucks for passenger and freight traffic on the railway, but for other manufacturing purposes. These will be followed next spring by a body of intelligent and able farmers who will form settlements and regularly colonise the vast but fertile country now lying valueless in the North-eastern portion of his Province.—*St. John's Newbrunswicker*

Pyramids in England—Singular Scheme.—The *Builder* notices, among the curiosities of the Industrial Exhibition, "a model of the great Victoria Pyramid," connected with a projected national cemetry on Woking Common, and designed to contain 5,000,000 coffins, and when completed, to be 100 feet higher than the great Pyramid of Egypt. A section exhibits 94 stages of catacombs on the base of 18 acres, which multiplied by the several stages will realize nearly 100 acres, to be redeemed from the cloud-land overhead.

In the course of Thursday the following articles arrived at the Exhibition, being presents to Her Majesty from India: 1. Elephant state trappings and howdah. 2. State palkee. 3. State throne, with canopy and eastern couch. 4. Moorchals, or emblems of rank. 5. State horse trappings. 6. State palkee or evening conveyance, to be carried by bearers.

From all parts of the Coast we continue to receive the cheering information, that there is abundance of Cod Fish. Our fishermen are busily engaged and the take of fish, up to the present, is much greater this year, than for a number of years previous. The weather has been cold, much rain has fallen, and we hear that several fields of wheat and potatoes have rotted in consequence.—*Gaspe Gazette.*

Razor Strop Paste is also made of candle snuffs and and answers very well, it consists in simply rubbing a small quantity of snuffs upon the strop, this imparts a keener edge to the razor than when no such paste is employed. Mechi's Celebrated Magic Strop is certainly an excellent article, but we question whether it be much superior to the ordinary and common place substance now recommended.

☞ Liquid manure applied to vegetation in dull or cloudy weather, has twice the effect as when applied when the atmosphere is clear and dry. Very early in the morning or after the sun has disappeared at night, is a favourable time to irrigate your garden beds.

The Fortune of Washington

The British account of the Battle of King's Mountain, contains a letter from Col. Fergusson, who was killed there at the head of the British forces, in which the Colonel relates, to his brother Dr. Fergusson, of Scotland, the following curious incident showing one of the remarkable escapes of Washington, in time of imminent danger. The occurrence happened while Fergusson lay with part of his riflemen on the skirt of wood in front of Knyphausen's division. We quote from the National Intelligencer: "We had not lain long (says Fergusson in his letter) when a rebel officer, remarkable by a huzzar dress, passed towards our army, within a hundred yards of my right flank, not perceiving us. He was followed by another dressed in dark green and blue, mounted on a good bay horse, with a remarkably high cocked hat. I ordered three good shots to steal near to them and fire at them; but the idea disgusted me. I recalled the order. The huzzar, in returning made a circuit, but the other passed within a hundred yards of us; upon which I had advanced from the woods towards him. Upon my calling he stopped, but after looking at me proceeded. I again drew his attention, and made sign for him to stop, levelling my piece at him; but he slowly continued his way. As I was within that distance at which, in the quickest firing, I could have lodged half a dozen balls in or about him before he was out of my reach, I had only to determine; but it was not pleasant to fire at the back of an unoffending individual who was acquitting himself very coolly of his duty. So I let him alone. The day after I had been telling this story to some wounded officers, who lay in the same room with me, when one of our surgeons, who had been dressing the wounded rebel officers, came in and told us that they had been informing him that General Washington, was all the morning with the light troops, and only attended by a French officer, in a huzzar dress, he himself dressed and mounted in every point as above described. I am not sorry that I did not know at the time who it was."

ENGLAND.

Beyond the questions of voting £300,000 to defray the expenses of the Kaffir war, nothing of importance had transpired in Parliament since its reassembling. The Lord Chancellor, in moving for this vote, expressed his satisfaction that the war did not appear likely to prove so serious as had been at first apprehended.

A new measure of Chancery reform has been introduced by Lord Brougham. It gives primary jurisdiction to Masters in Chancery in administration suits, without going before any of the Judges of the Court of Chancery. It is intended by its provisions to expedite proceedings.

24,520 persons visited the Great Exhibition building yesterday. The receipts amounted to £2,206 5s.

FOWLS.—Fowls that are confined to a small space should have a supply of grass. They may be let out on a grass plot to feed, or sods of grass may be given them. If let out to feed in the latter part of the afternoon, they will generally return to their house without trouble.

When fowls are confined to a narrow space it requires much pains to supply them with all the various kinds of food which they collect when running at large; and without care to supply their wants, they will not be profitable. When roaming as they please they devour many insects, eat gravel and various kinds of herbage, seeds of various kinds, and many other things which we cannot discriminate, though we look on while they select their food.—*N. E. Farmer*

NOISELESS WHEELS — A New Invention. — In this instance the invention consists in the application of a solid band of vulcanized india rubber over the iron tire of the wheel. The India rubber is held in its place by the tire having a raised rim on both sides, and by it own elasticity. The band of an ordinary carriage wheel is about an inch to an inch and a half in thickness, and unless on close inspection no difference from the common iron shod wheel is preceptible We have driven some distance in a carriage with the wheels so shod, and were struck not only with their noiselessness, but with the perfect smoothness of the motion — the wheels being in fact springs, and by their elasticity giving a lighter draught than with the iron tire. We have seen one set of wheels which have been driven 4,000 miles; they have here and there a trifling cut, but show no appearance of being worn out, and seem quite capable of another three or four thousand. An iron tire is generally worn out in 3,000 miles, so the India rubber tire has so far proved itself the more lasting. It is certainly a great addition to the luxury of a carriage to have it run without jar or noise; and it would be a universal comfort to have the streets of cities without the present incessant rattle of carriages and omnibusses, &c.—*Scientific American.*

USE OF CANDLE SNUFFS FOR CLEANING GLASS.—Candle snuffs are generally thrown away as useless they are, however, of great utility for cleaning mirrors and windows, especially the former. For this purpose take a small quantity of burnt snuffs, and rub them with a soft cloth upon the surface of the mirror; in a short time a spleudid polish will appear superior to that obtained by other means. We know those who clean the whole of the windows in a large house with snuffs; and we are told that, not only are the windows cleaned much better, but also much quicker than by the ordinary methods.

Death of Richard Lalor Shiel.

Richard Lalor Shiel, at an age which seemed to promise many additional years, died suddenly at Florence, on the 26th May.

We mourn for the man we knew in our youth as the ardent and skilful advocate of Catholic Liberty. His piercing directness and glowing energy in those days gave him power in Ireland and fame out of it. After O'Connell and Dr. Doyle, he was the most efficient emancipator of the Irish Church, from the penal devices of Cecil and Clarendon, Walpole and Pulteney. In the great effort which began in 1823 and ended in 1829, he won a full third of the confidence and love of all good Irishmen.

But unhappily for his own fame, the brilliant rhetorician, who had kept his law terms in a London garret, and made his bread by florid theatrical writings, was returned to the British Legislature as the second man of his nation. The subtle social seductions of the imperial aristocracy, breathed upon his patriotism, and it languished away. Some times in the Spring or the Winter, it would put forth a leaf or two, mournful mementoes of decayed vitality, but every year it grew shrivalled and Whiggish, and sear. Alas! for the Orator, he died in the silver-mounted harness of an embassy—an embassy accepted at the hands of a faction who while they gave him place, were already restoring the penal laws, he had so honorably labored to destroy.

Mournfull was this sudden death that fell upon him, unexpected as an Atlantic squall under the bright Italian sky. In Florence, the magnificent city, one of the sublimest Irish imaginations has been, in Shiel, extinguished—by the Arno of Artists and Poets, where Dante's steps are on the streets, and Tasso's song upon the river, the poet and rhetorician, had a home for a time and has a grave forever. Peace and the justice of History be with him! As God shall judge us, in our day of death, so let us endeavor to judge of him and all the dead; holding with a calm hand, the balance with two scales, putting in the evil sadly and the good willingly, and letting the judicial index decide whether is name is a name to be honored, or forgotten, or stigmatized hereafter.

Peace and the justice of History be with him.
—*Boston American Celt.*

A SON'S VIEW OF A MOTHER'S SOLICITUDE.

There is something in sickness that breaks down the pride of manhood—that softens the heart, and brings it back to the feelings of infancy. Who that has languished, even in advanced life, in sickness and despondency—who that has pined on a weary bed, in the neglect and loneliness of a foreign land—but has thought on the mother that looked on his childhood, that smoothed his pillow, and administered to his helplessness? Oh, there is an enduring tenderness in the love of a mother to a son, that transcends all other affections of the heart! It is neither to be chilled by selfishness, nor daunted by danger, nor weakened by worthlessness, nor stifled by ingratitude. She will sacrifice every comfort to his convenience; she will surrender every pleasure to his enjoyment; she will glory in his fame, and exult in his prosperity; and, if adversity overtakes him, he will be the dearer to her, by misfortune: and, if all the world beside cast him off, she will be all the world to him!

Many of our readers will doubtless remember a beautiful ballad written many years ago, by Mrs. Seba Smith, on the death of a woman who perished in the snow-drifts on the Green Mountains of Vermont.—True, however, to the instincts of women's nature, she tore the covering from her person and wrapped her infant in it. The mother was found locked in the arms of death, but the babe survived. The infant thus preserved from the snows of the mountain, is now Speaker of the Ohio Senate.—*American Paper.*

Editor's Notices, &c.

To our Exchanges.

We request our contemporaries to notice some of the distinguishing facts contained in our present number, relative to the Board of Agriculture and the Provincial Association. The annnal Exhibition it will be seen has been *postponed a week*, and it will come off at Brockville, *on the 24th, 25th, and 26th September*. The Premiums are considerably increased, amounting in the regular list to £1,200! Fifty pounds will be given for the four best agricultural reports of Counties; and the *Canada Company* have announced liberal prizes for Hemp and Flax, to be competed for in 1852. The Local Committee at Brockville are making extensive preparations, and a large and creditable Exhibition is confidently expected. We say to all interested in this patriotic object, (*and who is not?*) give it all the aid in your power;—be up and doing,—and *prepare in time*.

FLAX COTTON.

The Hon. Adam Fergusson, who has recently arrived from England, has left at our office a specimen of this novel material which he received in London, from the Chevalier Claussen, to whose mode of preparation, &c., we propose devoting some attention in our next. A. H. Armour, & Co., Booksellers, King St. west, in this city, have a very interesting specimen of this promising production, manufactured from *Canadian* flax. That something extensively beneficial will come out of this Flax-movement in Great Britain there is strong grounds for hope, and in Canada this matter ought to engage serious attention.

ADELAIDE ACADEMY.

We had the pleasure of attending the recent examination of the pupils of this Seminary, conducted by Mr. and Mrs. Hurlburt; and from all that we saw and heard, we left with a very favorable impression of the system of education that is pursued in that Institution. When young ladies are taught, in addition to the usual routine of female accoplishments, to study Bishop Butler's immortal work, on the Analogy of Natural and Revealed Religion, Paley's Natural Theology, and the best modern treatises on the most popular and useful branches of the Physical Sciences, there is progessively laid a solid foundation for their future respeetability and usefulness in society. For our part, we were glad to see the ornamental so judiciously blended with the practically useful. The answering in the various departments, strictly intellectual, was highly criditable alike to teachers and pupils; and the numerous and beautiful speeimens in drawing, penciling and various kinds of ladies' ornamental work, evinced the cultivated taste and ability of Mrs. Hurlburt, and the successful perseverance of her pupils. The music, vocal and instrumental, in the evening, was not among the least attractive portions of those interesting proceedings. The Academy we learn is now, as it deserves to be in a prosperous condition, and will re-open on the 1st of Sept. next.

TO CORRESPONDENTS.

RUST IN WHEAT.—We regret that want of space compels us to postpone this article till our next.

"R. L. D." received too late for our present number, the publication of which has been delayed in order to complete the Premium list.

"A BACKWOODSMAN'S" inquiry shall receive our earliest attention.

"RAMBLER."—Received too late for this number.

Agricultural Works.

STEPHENS' and Norton's Farmer's Guide. 2 vols. New Edition; just completed.
Knight's Farmers' Library; Animal Economy. 2 vols.
Stephens' Book of the Farm. 2 vols.
Sproule's Practical Agriculture.
Falkner's Farmers' Treasure—a Treatise on Manures.
The Farmer's Mine, by Heermance, revised by Allen.
Fessenden's Complete Farmer and Gardener.
Norton's Elements of Scientific Agriculture.
Boussingault's Rural Economy.
Smith's Productive Farming.
Johnston's Agricultural Chemistry.
Johnston's Lectures on Practical Agriculture.
Johnston's Use of Lime in Agriculture.
Liebig's Agricultural Chemistry.
Cleghorn's System of Agriculture, with Engravings.
Dana's Farmers' Muck Manual.
Squarrey's Agricultural Chemistry.
Rodger's Farmers' Agricultural Chemistry.
Strachan's Agricultural Tables.
Shier's Davy's Agricultural Chemistry.
The Horse, by Youatt, with Supplement by Spooner.
Stewart's Stable Economy.
The Ox, by W. C. L. Martin, of the Zoological Society.
White on Cattle Medicine,
Carter and Youatt's Cattle Doctor.
Youatt's Sheep, their Breeds, Diseases, &c.
" The Pig, or treatise and management of Swine.
Blacklock's Treatise on Sheep.
Boswell's Poultry-yard.
Bevan on the Honey Bee.
Miner's American Bee keeper's Manual.
Alcott's Produce Tables.

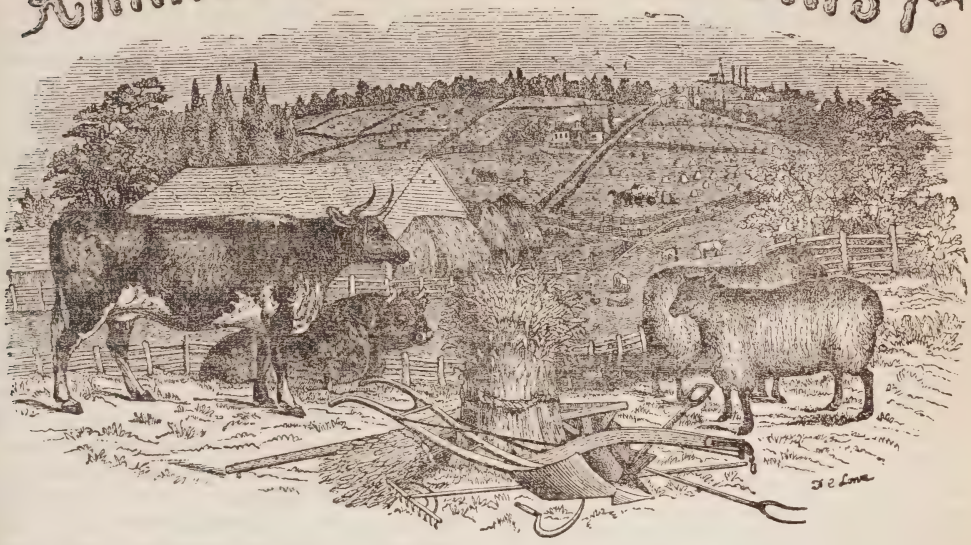
A. H. ARMOUR, & Co.
Toronto, July 12, 1851. 3t

MARKETS OF TORONTO — WHOLESALE PRICES.

July 7th, 1851.

Flour per barrel 18s 9d; Wheat per bush. 3s 9d @ 4s; Oats per bushel 1s 8d; Beef per 100lbs $4½; Lambs 7s. 6. a-piece; Calves £1 a-piece; Mutton per lb 3d; Butter per lb 7½d. Eggs per doz. 7½d; Hay per ton $12; Wool per lb 1s 4d; average.

CANADIAN AGRICULTURIST.



"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR.

VOL. III. TORONTO, AUGUST, 1851. No. 8.

The Canadian Agriculturist.

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One Dollar a-Year in Advance.

Twelve Copies, for one year . . . . . 3s. 9d.

To Clubs and Societies.

Twenty-five Copies and Upwards . Half-a-dollar each

New Subscribers can be furnished with back numbers for 1848, 1849, 1850.

Bound Volumes, for 1849 and 1850, will be supplied for 5s. delivered at our office. The two volumes bound in one, price 8s. 9d.

All remittances should be forwarded to William McDougall, Proprietor, Toronto.

All communications are expected to be pre-paid.

HINTS RELATING TO THE PROVINCIAL EXHIBITION.

To the Editor of the Canadian Agriculturist.

Dear Sir,

As we have changed the days for holding the Provincial Agricultural Exhibition, in consequence of the New-Yorkers taking up our regular time with their show, let me hope that you will exert your means, through the *Agriculturist*, to make our Farmers acquainted with the fact, otherwise it may lead to much confusion.

By reference to our Premium List, which is now printed and being circulated, the Farmers and Mechanics will find that we have very much increased the amount, and number of prizes.

While on the subject of the fair allow me to offer a few suggestions, which, I think, if carried out, would be of service to all parties.

I would recommend that farmers exhibiting grain, roots, and stock, should send all those articles with the view of disposing of them, after judgement had been pronounced; and that all parties should go with the determination of bringing something new or improved home with them. For instance, I have superior spring wheat, and another may have barley, oats, or pease, or something else better than my neighbourhood can produce, well, we exchange, and one or other pays the difference. He carries into his county what will improve it, and so do I, and in the same

way, stock, implements, and small seeds could be exchanged; the principle might indeed be carried out with advantage to the most insignificant article exhibited. I, for one, have never returned from the Provincial fair without buying something, (and I have attended all) but I must in justice say that I have once or twice fallen in with wooden nutmegs for my money; but with common caution such things may be avoided. And where can a farmer procure better seed wheat than that exhibited for the *Canada Company*'s Prize? A friend of mine bought up three lots for seed, at Niagara, last year, and went on purpose; but this year it will be too late. I will, however, buy a spring or yearling Durham Bull, and a Leicester ram lamb; and I have no doubt that many hundreds will go with similar intentions. So go prepared to supply what your neighbours require and fetch home what you require yourself.

My next neighbour last fall bought a sow pig at 50s. and it cost him 25s. to get it home, and I thought it dear when I saw it. Since then I bought one of her pigs at 40s. and seven more are sold at the same price. She had twelve for the first time, but four she smothered. The pigs amount to sixteen pounds and the sow could not be bought for less money!

Yours &c.,

R. L. Denison.

Denison Terrace,
July, 7 1851.

IMPROVED BREEDS OF CATTLE.

Woodstock, July 21st, 1851.

Sir,

Any one reading Mr. Parson's spirited and able letter, in your last number, must have been pleased at the skill he shows in defending his favourite breed of cattle; but, as he very justly remarks, a series of experiments on the virtues of the different breeds can alone determine the question. Would it not be well if those who raise the different breeds would favour the public through the medium of your paper, with short memoranda stating the *nature of farms and soils*, average quantity and quality of milk, &c. I am afraid we could not obtain the average weight of carcase, and when ripe for the butcher, for they are worth more as yet for breeding than for killing. In my opinion Mr. Parsons and Mr. Tye are both right. You may call it a bull, but as it is said that when two parties fall out they are both in the wrong; surely they must be both partially right. In England, the idea of one breed of cattle being good for every situation has long been cast aside. It was but to day I saw it derided in the *Agricultural Gazette*. Does not the same thing hold good here? On rich level farms near towns where butcher's meat in quantities, and yet of fair quality is required, the *Durhams* are undoubtedly the best; but on rough hilly farms the heavy Durham would not be able to pick up a very good living, whilst the light and active *Devon* would thrive and fatten. Such a farm as my own I would instance, which I took possession of at the beginning of last year, small, rough and hilly, most thoroughly worn out by the last occupant, having about five acres of Indian grass, and the rest bare stubble, bearing nothing but burrs, thistles and raspberries; soil light, in fact, bought merely on account of its presenting a good site for a house. Upon such a farm a heavy Durham would starve, but two or three Devons (purchased from Mr. Tye,) live, grow fat, and milk well. As an experiment I made from one gallon of milk, one-half a pound of butter, the afternoon's milking, two months after calving, which I think shows pretty good quality of milk, and my Devon cows present a wonderful and pleasing superiority in flesh over a native cow that runs with them. Again, if you give a greater price for your Durham cows, you run the greater risk, and a Devon cow at $50 is more likely to realize her value if thrown out of breeding by an accident that a Durham at $150, not to mention the fact of the latter being more subject to that very annoying disease. It would, however, be of immense advantage to a man who wishes to invest in improved stock, to be able to choose the proper subjects for purchase in his own particular case, which the plan I have proposed would, I think, assist him in. I am afraid my letter is a long one, but the great interest I take in farming, and especially in live stock must be my excuse.

And remain Sir,

Yours faithfully,

A Hamilton Farmer.

P. S. Is it not stated in *Youatt*'s work on British Cattle, that Mr. Bakewell's improved long horns were *inferior* to the stock they sprang from as milkers. I have not the book at hand just now to refer to, but such is my impression.

A. H. F.

SALES OF IMPROVED STOCK.

Thinking it will be interesting to our readers we give below some details of the sales of Messrs. Morris and Vail, as advertised in our previous numbers. The report of Mr. Vail's sale is taken from the *Rural New-Yorker*. We are glad to observe that several animals belonging to these two eminent breeders were purchased by parties on this side the lines, and could have wished the number had been greater. A friend of ours who attended both sales, and who has had an extensive experience in these matters, informs us that the arrangements were of the most satisfactory character; strongly reminding one of the way such things are managed in the Old Country, where annual sales of live stock have been attended with such wide and signal advantage. It is satisfactory to know that both Mr. Vail and Mr. Morris have reserved a number of very superior animals for breeding purposes; so that the public may expect an increasing interest being felt in their annual sales for the future.

MR. VAIL'S GREAT SALE OF SHORT HORNS, TROY, NEW YORK.

The sale of a part of Mr. Vail's celebrated herd of Short-horns took place on Thursday, June 26, 1851. The assembly of persons was not large, but was composed of many of our first breeders, not only from this country, but from Canada also. The animals were in good condition, and although the prices they brought were not *extravagant*, yet they were such as to give great encouragement to breeders of Short-horns. It was generally considered the most satisfactory sale ever made in this country, and proves conclusively that the time is not far distant when the Short-horns will be generally appreciated according to their true merit. The animals for sale were each labelled in the morning, with the name and number of the lot, which gave a fine opportunity for persons to examine the herd at their leisure. At about 11 o'clock the animals were arranged in the grove near the cottage, and tied. This gave an opportunity for still closer examination. At 12 o'clock the company were invited to partake of an excellent lunch; and at about 1½ o'clock the sale commenced. Mr. Miller, the auctioneer, acquitted himself admirably, and in less than two hours the animals were all sold. There were thirty-three animals sold (including two at private sale,) which brought the sum of $4,170.

Below will be found a synopsis of the sale, the price each animal brought, together with the name of the purchaser.

COWS AND HEIFERS.

Name.	Calved.	Price.	Purchaser.
Lilly 2d	—— 1845	$170	Gen. Cadwallader
" 3d	—— 1848	135	H. Wells, Cay'g co
" 4th.	—— 1849	90	Gen. Cadwallader
" 5th.	March '51	165	do.
Fun *	Sept '44	235	H. Wells.
Dahlia 5th	April '49	75	Gen. Cadwallader.
Eunice 2d	July 1840	160	do.
" 3d	Aug. 1843	125	J. Osborne On'd co.
Wilddame 4th	—— 1848	220	Gen. Cadwallader.
" 5th*	Feb. 1851	55	do.
Daisy 3d.	—— 1844	230	S. P. Chapman.
" 5th	—— 1849	150	Gen. Cadwallader.
Fill-Pail 5th	—— 1849	95	do.
Victoria 4th	May 1847	90	H. Wells.
Rosette 2d	—— 1847	175	Gen. Cadwallader.
" 3d	Sep. 1849	80	Wm. Osborn.
" 4th	Aug. 1850	105	Gen. Cadwallader.
Yellow Ekin	June 1849	110	do.
Willey	—— 1837	90	do.
Profitable 2nd	Aug. 1849	125	H. Wells.
Victoria 5th	April '51	75	Gen. Cadwallader.
Beauty	—— 1851	90	Wm. Osborn.
Red Lady	—— 1851	60	Gen. Cadwallader.
Fill-Pail 6th.	—— 1850	90	J. B. Wilson, Wis.

AT PRIVATE SALE TWO BATES HEIFERS.

Lady Barrington 5th	—— 1849	$350	Mr. Remmingt'n Pa
Hilpa 4th	—— 1851	300	S. P. Chapman.

BULLS AND BULL CALVES.

Duke of Wellington †	Oct. 1839		
Meteor ‖	July 1841		
Bippo 3d	Sept '48	140	Dr. Richmond, C W
Leopold	Oct. 1849	50	Mr. Cameron, "
Grand Duke	Feb. 1850	95	Wm. Osborn.
Falcon	Sep 1850	90	Dr. Richmond.
Marquis	Aug 1849	60	do.
White Prince	April 1851	55	F. Yates.
Fashion	—— 1851	30	Gen. Cadwallader

* This calf sick. † Dead. ‖ Not sold.

SUMMARY OF THE SALE.—Thirty three animals sold for $4,170; average per head $126.

Twenty-five Cows, Heifers and Heifer Calves, $3,650; average per head $146.

Eighteen Cows and Heifers $3,010; average per head $167.

S. P. C.

(*To the Editor of the Canadian Agriculturist.*)

Mount Fordham, N. Y.,
June 28, 1851.

SIR,

I send you a correct statement of my Sale for publication, should you wish to insert it.

The thorough bred Short horns were very few and such as I could spare from my herd. Nos.

4 and 10 were starred animals and not recommended. Take those out of the lot and the cows, Heifers and heifer calves, 10 in number averaged $104 12½ per head. It will now be seen that I have cleaned all animals off my farm except thorough breeds of each kind, and I wish, to be put on record as such hereafter.

My thorough bred Bulls and Bull calves, 4 in number, averaged $126 12½ per head.

The improved dairy stock consisting of cows, heifers, and heifer calves, 20 in number, averaged $78 87 per head.

Grade Bull calves, 3 in number, averaged $80 per head.

Suffolk Pigs, 23 in number, dropped from the 7th to the 10th of April last averaged as follows:—

9 Pair of pigs averaged per Pair $27 23.
5 Single Boar Pigs per head 16 60.
1 Sow in pig, do 30 00.

Buck Lambs, 5 in number, lambed from the 21st March to 19th April, averaged per head $29 00

The sale was strictly a fair one as to bidding without any underhand arrangements for running up or whipping the Devil round the stump. Many of the animals sold for half their value, on the whole I was satisfied as a second annual sale.

Yours, &c.,

L. G. Morris.

STATEMENT OF L. G. MORRIS'S SECOND ANNUAL SALE ON THE 24TH JUNE, 1851.

Thorough bred Short Horn Cows, Heifers and Heifer Calves.

Lot 1, York, Gen. Cadwallader, Philadelphia, $110 00
2, Cleopatra, 9 years old, do do . . 85 00
*4, Coquette, 4 years, E. H. Smith, Smithtown, ... 50 00
5, Red Lady, 4 years Gen. Cadwallader, Philadelphia, ... 175 00
6, Eleanora, 4 years, do do . . 135 00
8, Miss Rolfe, 2 years. A. Van Ingen, Jr. . 105 00
9, Fame, 16 months, Gen. Cadwallader, Philadelphia. 60 00
*10, Red Rose, 15 months, G. Hopkins, Long Island 30 00
11, Kate, 5 months, G. G. Hubbard, West Needham, Mass. 140 00
12, Lily, 3½ months, Joel Tirrell, Oswego, . 80 00
13, Beulah, 2¾ months, Gen. Cadwallader, 55 00
14, Pocahontas, 11 years, Henry Parsons, Canada West. 100 00

IMPROVED DAIRY STOCK.

Cows, Heifers, and Heifer Calves.

15, Beauty, 6 years, Dr. A. Smith, New Rochelle, ... 105 00
16, Sue, 8 years, Richard Lewis, New York, 100 00
17, Watson, Henry Parsons, Canada West, . 80 00
18, Strawberry, Gen. Cadwallader, Philadelphia. 75 00
19, Bess, 6 years, G. Hopkins, Long Island, 65 00
20, Gazelle, 4 years, G. W. Thacker, Pelham 105 00
21, Alarm, 4 years, John Rae, Morrisania, . 37 50
22, Lady Independence, 3 years, Robert Segoin, Richmond Co. 67 50
23, Miss Stewart, 2 years, James Robertson, Peekskill, ... 70 00
24, Harlem Maid, 2 years, Gen. Cadwallader, Philadelphia, ... 75 00
25, Lady Canning, 2 years, G. G. Wilmerding, Suffolk Co. L. I., ... 120 00
26, Marrietta, 2 years, Gen. Cadwallader, Philadelphia, ... 70 00
27, Sabina, 2 years, Dr. Smith, N. Rochelle, 77 50
28, Miss Mary, 19 months, Robert Segoin, Richmond County, ... 75 00
29, Bessie, I. I. Mapes, New Jersey, . . . 35 00
30, Clara, 14 months, Robert Segoin, Richmond county, ... 30 00
31, Lawra, 10 months, Gen. Cadwallader, Philadelphia, ... 30 00
32, Lucy, Gen. Cadwallader, Philadelphia, 37 50
33, Helen, 3¾ months, Morris Ketchum, N. York, ... 150 00

Short Horn and Ayrshire Cows.

34, Countess, 4 years, Gen. Cadwallader, Philadelphia, ... 32 50
35, Jeannie, 2 years, Morris Ketchum, N. Y. 90 00
36, Betty Merryman, 9 mo's, P. R. Paulding Tarrytown, ... 30 00

Nearly Thorough Bred Dutch.

37, Julia Edgar, Lewis Levingston, Rhinbeck Duchess co., ... 120 00
38, Dinah, do do do . 37 50

Oxen.

39, 1 Yoke of Oxen, S. T. Wright, . . . 145 00

Bulls and Bull Calves—Thorough Bred Short Horn.

1, Logan, 23 months old, Oliver Slate, Jr. Throgs Neck, ... 175 00
4, Mark Anthony, 4 months, J. B. Wilson, Wisconsin, ... 135 00
5, Passaic, 2 months, Joel Tirrell, Oswego, 50 00

Slightly crossed With Amsterdam Dutch.

6, Pontiac, 19 months, J. G. Godwin, Kingsbridge, ... 70 00
7, Red Rover, 4¾ months, T. C. Rives, Virginia, ... 105 00
8, Medley, 11 mo's., Edward Biddle, Rockaway, N. J., ... 65 00

Pure Breed Devon.

10, Barton, 16 months, Gen. Cadwallader, Philadelphia, ... 145 00

Buck Lambs.

1, Buck Lamb, 3 months, Aaron Clements, Philadelphia, ... 30 00
2, do 2¾ months Edward G. Faille, West Farms, ... 30 00
3, do 3¾ months, Lincoln Brooks, Providence, R. I., ... 30 00
4, do 3¼ mos., Gen. Cadwallader, Philadelphia, ... 30 00
4, do 2 months do do. . 25 00

Swine.

1, Pair Pigs. Henry Parsons, Canada West, 37 50
2, do Gen. Cadwallader, Philadelphia, 30 00
3, do Churchville, ... 30 00
4 & 5, Two Pairs of Pigs, G. G. Hubbard,

	West Needham, Mass, ...	50 00
6.	One pair of do Captain Spencer, . . .	20 00
7.	One Pair of Pigs, Thomas Hancock, Burlington N. J., ...	20 00
8,	do Henry Parsons Canada West, . .	30 00
9.	do Aaron Clements Philadelphia, . .	27 50
10,	Single Boar Pig. Lewis Levingston, Rhinbeck, Dutchess co.	17 00
11,	do Gen. Cadwallader, Philadelphia, ...	17 00
12,	do J. B. Wilson, Wisconsin,	17 00
13,	do Thomas Hancock, Burlington, N. J., ...	16 00
14,	do Lincoln Brooks, Providence, R. I., ...	16 00

All the above Pigs were dropped from the 7th to the 19th of April, last.

15,	One Sow in pig 9 months old, G. G. Hubbard, West Needham, Mass., ...	30 00

FLAX MACHINERY—VALUE OF MARL, &c.

To the Editor of the Canadian Agriculturist.

Sir,

I see by the Old Country papers, that Mons. Claussen has advertised to license his patent for preparing flax. Forty years since, Mr. Lee of Enfield, near London, took out a patent for preparing flax in its dry state, as pulled. At that time I was engaged with a party who were promised a license by Mr. Lee, and they in consequence sowed many acres to flax. I left that country and heard no more of the patent; but subsequently I saw quoted Mr. Lee's recommendation of sowing two bushels of salt per acre with flax, in the old *Farmer's Journal;* and I think also by Sir John Sinclair, in the *Code of Agriculture*. The sample of flax that I saw which had been prepared according to Mr. Lee's process was of a beautiful white silky texture, and believe that Mr. L. failed to enrich himself, solely through a deficiency of tact in bringing his patent into notice. I understand that the machinery and bleaching were both unexpensive. This patent is now public property; enquiry regarding it, by the Board of Agriculture, might tend to procuring an expeditious and cheap method of working flax, and of advantage to this Province.

You recently recommended the application of Marl to a Gwillimsbury correspondent, and 2 years since, I saw a notice to M. M., directing him to apply 30 bushels per acre, which allowance I thought very narrow.* Considering the durability, value, and abundance of Marl, I cannot account for its not being generally applied to land. We seldom laid less than 20 cart loads per acre, which lasted for as many years; in many instances, however, making the first few crops drunk with exuberance. In the deep lands, from firmer estuaries, a less quantity sufficed. Professor Johnston, in one of his lectures, states that in Hampshire he has seen the crop of wheat doubled by the application of Chalk. As Sir J. Sinclair remarks of Lime to Peat, that a second coat does no good within a few years, even where only half the usual quantity has been laid thereon in the first instance; so with Marl, a second coat does no good until after the lapse of 12 or 15 years. A remarkable instance of the fertilizing property of a subsoil is given in the *Albany Cultivator*, vol. v, p. 297, by Mr. Holbrook, in describing the farm of Messrs. Lynde in Guildford, Vt. Two years since he (Mr. B. L.) commenced digging a cellar, and opened a trench about 14 feet wide, 18 feet deep, under the whole length of the barn, 70 feet. The earth taken out was all carried to the field and spread as a top dressing upon a moist piece of mowing land; the effect was truly wonderful, doubling the quantity of hay. One would not have supposed that earth taken out to the depth of 8 feet would have produced the effect; and it certainly affords a substantial proof of the benefit to be derived from barn cellars when the salts are annually saved and made available. With deference to Mr. Holbrook, I venture an opinion that the benefit derived was from the richness of the subsoil in calcarious earth; doubtless this subsoil also runs through a location. This fact points to the fertilizing property of many subsoils. In one of the concessions leading from Yonge street to Weston, a steep hill has been cut through. Should business or pleasure lead you that road, you will see how rich in Marl the earth becomes the lower its sides descends. In Mr. Hind's lectures, he recommends 25 bushels of Lime per acre; this allowance too, approaches temperance, excepting however, the Magnesian lime of which that quantity is sufficient for one application, in preference to double the bulk, on account of its great causticity. Persons having farmed on the borders of the forest of Dean well know that 80 bushels per acre would render the soil sterile for seven years, and that it would grow nought else than quitch grass, or ferns. With other qualities of Lime this rule does not hold good. We once for experiment laid one bushel per rod, each of soaper's ashes and lime upon two acres of fallow, and at harvest saw no perceptible difference in the wheat crop. Soaper's ashes, however, are like strong drink, on some land, drawing all the good out of it with the first crop, leaving the ground unkind for years afterwards; but on other soils this manure proves permanently fertilizing as in firmer estuaries. Intemperance is beneficial, as the following will verify. When the British Army during the last war was concentrated near Plattsburg, the rum for consumption by the soldiers was stored in a

field which had been skinned time out of mind and would not return a new for an old one. On the precipitate retreat of the army the rum was all staved and the field inundated with the liquor. From that time it was remarkable for its fertility and so continued. My informant left when a young man; and this statement was afterwards confirmed by an older and permanent inhabitant from that part of the States. Excuse my poverty of language. Your pen may attract the attention of the Board of Agriculture to the value of Marl and may induce the Directors to offer Premiums for its application to land, in several locations, in order that its worth may be tested.

RAMBLER.

P. S. The parties who were concerned in Mr. Lee's patent, were Everett & Co., Bankers, London. This Bank dissolved, I believe, previous to 1820.

[* The per centage of Lime in Marls which constitutes their chief value as fertilizers, is very various. We have known 40 and even 50 or 60 cart loads applied per acre, in some parts of England. Our correspondent must have misunderstood the purport of our remarks. We have frequently applied from 100 to 150 bushels of chalk lime to the acre. In that case the dose was sufficient for a long rotation. Many of the Marls in Canada, possess a highly fertilizing power.—EDITOR.]

PLEASURES OF AGRICULTURAL PURSUITS—SUGGESTIONS RELATIVE TO THE PROVINCIAL PREMIUM LIST.

Wolf Island, Kingston, July 25, 1851.

(To the Editor of the Canadian Agriculturist.)

DEAR SIR,

There are few situations in human life in which a man can be employed more innocently, more honorably, and, to the world in general, more profitably, than that of the farmer. His life is (*ceteris paribus*) attended with fewer temptations than that of most other men, and in pursuing his calling to the utmost extent, he is not only not doing violence to any dictum of conscience, but is actually, when doing most to develope the resources of nature, doing most to advance the general interests of mankind in connection with the particular interests of himself. His occupation too is a healthy one; he breathes the healthful atmosphere of the country, treading on her green velvet carpet and canopied by her deep blue sky. The volume of nature lies open before him, and every blade, and shrub, and blossom has its mystery and its history, and invites inquiry, and amply repays the humblest student of those laws which regulate its inward structure and external mould. Then to a being ever changeable and ever changing, as is man, how beautifully consonant is nature—her endless varieties of productions—her ever varying seasons—the meadow and its grasses—the pasture and its flocks—the field and its grains and its roots—and the garden, its fruits and flowers—winter and summer and their intermediate changes—all endued with beauties of their own, where the eye is practised and the heart in tune.

But, alas! how have I rambled from my appointed task!

When honorable minds fired with enthusiasm for an honorable though a not duly appreciated, pursuit, lend their time and talents to its advance, we ought to be careful not unnecessarily to find fault; but is it not also characteristic of minds of the same stamp to listen to advice honestly given, and if acquiesced in, to *amend* what in a moment of haste may have been overlooked.

Now what, I may ask, is the practical end to be answered by demanding that each person competing for a prize should exhibit "*two* bushels," and not one bushel, of "Swedish turnips, red carrots, white carrots, long red mangel wurtzel, yellow globe, do., parsnips?" Or is such a regulation not calculated to prevent persons at a distance from bringing such cumbrous, heavy articles at all? Let us fancy an individual coming from the interior parts of the Huron or London districts with twelve bushels of roots! Why, it would not require many such loads to freight a ship. When the show was held in Kingston in '49, I, in accordance with the then regulation, exhibited a bushel of sugar beets, but was awarded only the second prize, though the person who obtained the first prize, my brother-in-law's gardener, actually exhibited only two roots, because as, I think, he told me he had but the two. I think I know the reason for adopting the regulation of the Board, but there are few people who cannot as easily, by extra and extravagant care, raise two bushels of good roots as easily as one. I live nearer than most people to the place of exhibition, but knowing what I do of the difficulty of conveying large heavy loads of things to boat, by boat, and from boat, I doubt if I shall be tempted, much as I should like to compete, to take two bushels of stuff of any one kind. Perhaps many will think with me, an alteration of regulation in this or other particulars might, if judged desirable, be signified through your paper and the public press, to the public generally.

Again, why have the Board ignored the existence of the long yellow mangel wurtzel, and on what grounds do they withhold a premium from it and confer one each of two other kinds actually named to the exclusion of it? Or why allow of one bushel of sugar beet being presented and yet demand two bushels of the aforenamed?

Again, it appears to me somewhat remarkable that, whilst Durham *Cows* are to be awarded prizes in their own peculiar class as contradistinguished from Devons, or Ayrshires; and that, whilst Leicester *Sheep*, and South Downs, are to have

each their own premiums. That *Pigs* should be classed under the one head of "Pigs," as if there was in reality no distinction between the large and the small breed—between the coarse-boned and the fine-boned—between the pig of early maturity and the pig which comes to its full growth and plumpness after many months. I possess the pig and the breed of pigs which took the first prize in the Province when I exhibited her; but to compare her young at six months or two years with a large boned Irish sow, or full grown Irish hog, without taking into consideration the amount of food consumed by each would hardly be fair. On this account (though I have a beautiful young boar, which Mr. Briggs of Kingston affirms, grew 44 lbs. in 22 days; and though I possess some beautiful sows of the Lord Radnor breed) it is yet dubious, if I shall go to the expense or trouble of exhibiting any of them, for the same reason that I should be unwilling to exhibit a Devon two year old bull where Durhams were allowed to enter the lists. In fact, on what *principles* could a comparison be instituted? If these were declared beforehand, then we might more clearly understand the matter and decide accordingly. I am, it is true, *only one*, but what influences or tends to influence one may influence *many*.

Again, I am told, that "a certificate must be produced to shew the breeding of *grade* animals." Now what can be the object of such a regulation? The *Thorough-bred* animals had all been provided for. Was it not, then, sufficient that *other* stock (not thorough-bred) should be allowed to compete as *such*, that is, as crossed (without the necessity of producing a pedigree), particularly as the cross (whether of Ayrshire, or Devon, or Durham,) was to make no difference in the matter of awarding the premium. There are "*grade*" animals (if I understand the term: and most people in this District, I think, understand it as I do) of *every* degree and of *most uncertain* origin,—half-bred, quarter-bred, eighth-bred—native crossed with Ayrshire, or half Ayrshire, and crossed again with Durham or Devon, or with half Devon or half Durham,—and because a certificate of breeding (often too readily to be obtained, if no conscientious scruple prevent its demand) cannot be procured, is a noble animal to be denied its merit, and a less noble or an ignoble one to obtain the reward, simply because the origin of the one was of later date, and could, therefore, be the more easily traced. Would this be just?

With these remarks you may not accord; but still, I hope, you will not refuse them a place in your journal. I was much pleased with the subject matter of Mr. Parsons letter in this month's "Agriculturist." I only regret that he has not entered more into the matter statistically. I hope the controversy will be continued, as it is one calculated to throw light upon the subject of breeding and cattle. I have not seen Mr. Tye's letter, the *Agriculturist* of last month not having come to hand (so far as I have been able to ascertain,) and this last number only a few days since and opened by me last night. We are getting some nice stock in this District—thorough-bred Durham and Ayrshire Cows and Bulls. A year old Bull, (Durham), named Halton, was bought here, about two months since, for thirty-seven pounds. I have a ram lamb which weighed on July 2nd 100 lbs., and my neighbour, Mr. Going, has one which on the 6th weighed 111 lbs. In haste,

Your's faithfully,

J. A. ALLEN.

P. S. Have not the cattle of the country some admirable qualities? Are they not worthy of notice and of premiums? Ought not *their* improvement as pure bred *natives* to be encouraged by the selection of the best by judicious care and breeding. J. A. A.

[We readily insert the foregoing communication from our respected correspondent, and invite the attention of the managers of the Provincial Association to the subjects it embraces. The premium list underwent much deliberation, and as it has been already circulated throughout the Province, we fear that it is too late for the present year, to carry out the alterations suggested by our correspondent; but we have no doubt they will receive due attention by the Board hereafter. The object of certificates to shew the breeding of *Grade* Stock, is, we apprehend, simply to gratify a natural curiosity and to impart useful information; no grade animal will be disqualified for a premium for want of a certificate, if otherwise eligible. This however will not be the case with the *pure breeds;*—from them a full and satisfatory pedigree will in all cases be required. As to articles of merit, not enumerated in the premium list,—and of such there must necessarily be more or less in an Exhibition of so extensive a range,—the Directors have always been disposed to deal as liberally as the state of the funds of the Association would allow; and we have no reason to think that the present year will be an exception. The Board of Agriculture will doubtless feel gratified in receiving suggestions and information on the important objects which they seek to promote, from all portions of the Province.]—Editor.

The Monster Ox. — The magnificently great Ox raised by Col. N. C. Baldwin of Cleaveland, will soon be sent on a pilgrimage to the World's Fair. He has been fattened for eight years, and now weighs the enormous figure of 4,000 pounds. The world may safely be challenged to produce his equal. A mile per day is now his longest land journey! He will be transported East by water, and from Boston will need a pretty good sea craft for his individual comfort.—*Cleaveland Herald.*

RUST IN WHEAT.

To the Editor of the Canadian Agriculturist.

Sir,—Permit me, through the columns of your excellent journal, to suggest, for the consideration of your scientific readers, an explanation of the cause of the rust or shrinking of wheat—that most fruitful source of anxiety and often of disappointment to the Canadian farmer. I do not, Sir, baptize these suggestions with the high title of *theory*, nor propose them as a certain solution of the cause of the rust of wheat, but I would offer them for the consideration of naturalists. The only explanation with which I have met of the rust of wheat is that given by Mr. Knight, some 40 or 50 years ago. Mr. K. suggested and scientific agriculturists have adopted his explanations, that immediately after a rain, a greater quantity of sap, than usual, ascending through the pores or capillary vessels, bursts the outer coating of the straw, and by this disorganization the further growth of the grain is prevented. From the absence of facts bearing upon this point, it may be equally impossible to refute or confirm this theory. Upon it I have only one remark to make, namely;—if the vessels of the straw are liable to burst by the increased amount of sap caused by the rain, I would ask, why they do not burst at an earlier period, when the straw is certainly more tender than at this particular time. This, I believe, does not take place, otherwise the growth of the straw might be checked when its head had attained but half its natural size? I am not aware that this ever occurs.

To the botanist I would define this theory (I use the term for convenience for want of a better) in few words. Through the agency of warm rains followed by sultry or hot weather, the *anther* explodes before it comes to maturity, and, therefore, the *pollen* which is indispensably necessary for the perfection of the grain, never reaches the *stigma*, and hence the rust or skrinking of the wheat.

For the information of the general reader and those unacquainted with botany, allow me to subjoin the accompanying explanation. If any, who are familiar with the terms and science of botany, are disposed to censure my illustrations as too prolix for themselves, such will bear in mind that they may not be so to those unacquainted with this subject; and as this point, so far as I am aware, has not been touched upon, I shall take the liberty of a wider range in the elucidation of my views than, otherwise, I should feel justified in doing.

The cause of the rust or shrinking of wheat must be looked for in the imperfection or derangement of some of those organs which are necessary for the full development of the grain. The principal organs of the growth of plants and trees are two—the stem and the leaves. In the tree the sap ascends through the *alburnum* (the last year's growth) to the leaves; through the agency of the leaves it undergoes certain chemical changes, and then descending again between the bark and *alburnum*, it forms another layer between the bark and last year's growth. If either of these organs should become deranged, as, for example, if the tree were *girdled*, or the leaves picked off, the growth of the tree would be checked or entirely stopped. In the production of the grain there are other organs, the derangement of which, suggests the most natural cause of the rust of wheat. These organs are what botanists call *stamens* and *pistils*.

On examining flowers, we shall find a number of thread-like projections in and around the centre of the blossom. If the reader will take the wild or most of the single garden flowers, he will find these organs very distinctly marked, such as the strawberry, tulip, (stamens and pistils very prominent) pink, apple, cherry, &c. The centre one or ones (for there is sometimes one, sometimes many) we call *pistils*; those surrounding them—the *stamens*. At the base of the pistil is the germ of the future seed; on the top, an opening called the *stigma*. On the top of each stamen is a knob or box, called the *anther*, filled with a dust-like substance called *pollen*. This pollen, by the bursting of the anther, is scattered, some of which falling upon the stigma of the pistil, is itself burst by the moisture of the stigma, and from it a liquid flows through the pistil to the germ. This liquid is necessary for the full developement of the seed. Without it the seed never comes to maturity. If then any disorganization of these organs should take place, the growth of the seed would be checked. As moisture causes the auther to swell and burst, if there be too much wet just before the authers are ripe, or far enough developed, they burst, and the pollen is scattered before it comes to maturity; as a necessary consequence the germ of the future seed is deprived of this indispensable nutriment, the growth of the seed is checked, and the grain shrinks—or as it is called—rust ensues.

The particular office performed by the stamens and pistils was unknown until explained by Linnæus; they have, however, been considered, from remote antiquity, as of great importance in perfecting the seed and fruit. A species of palm cultivated by the ancients, has the stamens and pistils on separate trees; the Greeks discovered that, in order to have good fruit, it was necessary to plant the two kinds of trees near each other, and that without this assistance, the dates had no kernal. In the East, at the present day, those who cultivate palms select the trees which have pistils, as these alone bear fruit. When the plant is in blossom, the peasants gather branches of the wild palm trees which bear stamens on the flowers, and strew the pollen over the cultivated trees. A curious fact, illustrative of this subject, is related by an Italian writer, "that in places about forty miles distant, grew two palm trees, the one without stamens, the other without pistils; neither of them bore seed for many years; but in process of time, they grew so tall as to tower above all the objects near them. The wind, thus meeting with no obstruction, wafted the pollen to the pistillate flowers, which, to the astonishment of all, began to produce fruit."

In the summer of 1846 or 7, finding a few heads of wheat in my garden some distance from any field of wheat, I cut off all the heads but one; from this one I carefully clipped off all the anthers from the stamens, leaving the pistils, as far as possible, untouched. On examining the kernals of wheat at the proper time, I found them shrunk, especially after they had lain for some time in a dry place. Although the straw continued bright, the grains were only about two-thirds the natural size. I don't give this as an *experimentum crucis*, or decisive proof of the correctness of my theory, for more facts would be required to test it; but I give it as one fact bearing upon the point, and as a specimen of what might be done by those having good opportunities for such experiments.

All these facts, viz., the peculiar office, as explained by Linnæus, of the stamens and pistils,—the practice of the Greeks in planting near each other the palms bearing these organs when they grow on separate trees,—the practice of the peasants of the East in strewing pollen over the pistillate flowers,—the case mentioned by the Italian—and the experiment just explained in clipping off the anthers of the head of wheat, and the wellknown fact that moisture will cause the anther to explode before the pollen is ripe enough to be disseminated, all bear upon this one point, that the deficiency or imperfection of the pollen, may be the cause of the rust of wheat. That the pollen may fail to perform its functions from some other cause than the one just assigned, I am ready to admit; but it appears to me that facts and analogy bear us out in the inference that the immediate cause of the rust, is to be looked for in some defect in these two organs—the stamens and pistils.

Whatever may be the real cause of rust, that cause must be discovered, before science can suggest a remedy. Some fortunate individual, it is true, may stumble upon a remedy, but accident is entitled to very few of the many discoveries which have blessed the world. If the true cause of the rust in wheat has been pointed out in these remarks, a preventive might be suggested; but that preventive nature herself must provide.—This, it must be acknowledged, is the only practically important question. This question I must confess myself not competent to answer; yet if this article had not already grown beyond the limits which you have allowed me, I would offer a few suggestions, which might, at least, direct the attention of those better qualified than I can pretend to be, to a subject connected in so vital a manner with the prosperity of Canada.

Yours, &c.,
J. HURLBURT.

Toronto, 3rd July, 1851.

GEOLOGICAL SURVEY OF CANADA.—MR. HUNT'S REPORT.

(*Concluded from page* 126.)

Peat.—I have already alluded to the peat of the Savanne of St. Dominique, which from its abundance appears well worthy of attention in an economic point of view. In a country like Lower Canada where coal is wanting, and where wood is already becoming in some parts scarce, the public attention must ere long be turned to some other source of fuel. Among these we have at home a very important one in the shape of our immense deposits of peat. Besides the large area above alluded to, there is an extensive deposit of a similar character which appears on the road between Longueil and Chambly, and extends westward over a large tract; another described as of large size is found in the Seignory of Ste. Marie de Monnoir, and still another south of Laprairie; while the peat bogs on the south side of the Ottawa, and along the line of the Rideau Canal, which you have alluded to in your Report upon the Ottawa, are of great and but imperfectly known extent.

The value of peat as a fuel is almost unknown in this country, but the amount of it consumed in the British Isles and in Continental Europe, shows that it is a product of great and increasing importance. The amount of peat raised in France in 1845 was 420,000 tons, and its value 977,560 dollars; the number of workmen employed was

nearly 40,000. Its price in the city of New York, where it is consumed in considerable quantity, is about $4½ per ton. In addition to its use as a fuel in domestic operations, peat or the coke obtained in charring it, by a process similar to that employed for the manufacture of wood charcoal and mineral coke, is now successfully used to a large extent for the manufacture of iron, in France, Sweden, Bohemia, Bavaria and Wirtemberg; the iron thus obtained is said to be of superior quality, and the peat coke is even preferred for the refining of steel. Peat affords by distillation a brilliant gas for illumination, in a quantity as great as ordinary coal, and entirely free from those sulphurous compounds, which contaminate the gas from the latter. In Ireland according to Sir Robert Kane, it is in general use upon the steamers on the River Shannon, in the midst of a coal bearing country, and is employed in mills and factories for generating steam, to which from its flaming character it is well fitted.

By a process recently patented in Great Britain, by which the peat is condensed with the aid of a strong hydraulic press to about one third its bulk, a fuel is obtained more dense than oak wood, which by charring yields a coke eminently combustible, and heavier than wood charcoal; it can be manufactured for twenty shillings sterling per ton. The patentee, who is the managing director of the Dublin Steam Navigation Company, prepares also an artificial coal from peat, of which it is stated, as the result of experiments made on the vessels of the Company, that with ten hundred weight, the same steam power is obtained as with seventeen and a half hundred weight of pit coal; thereby saving thirty per cent. in the stowage of fuel.

For the above facts, which I have adduced in order to call attention to the value of our own peat bogs, I have been indebted to Mr. R. C. Taylor's late valuable work, "Statistics of Coal," and Sir Robert Kane on the Industrial Resources of Ireland.

The late surprising statements of the O'Gorman Mahon, as to the practicability of manufacturing oil, acids, wax, as well as gas and coke from the peat of Ireland, do not appear as yet sufficiently sustained by experiment to render them perfectly satisfactory; although such products are undoubtedly to be obtained by distillation of peat, it does not appear certain that they can be made economically available.

The peat of our vicinity is of a very excellent quality, and contains but a small portion of ashes; according to competent judges who have seen it, it is equal to the best peats of Ireland and Scotland. It shall be my endeavor to collect for another year some statistics as to the extent of our deposits, and to submit the different samples to examination in order to determine their real and relative value as fuels.

In this connection I may allude to the asphaltum or mineral pitch which is found on the nineteenth lot of the sixth or seventh range of the Township of Enniskillen, Canada West; attention was first called to it by His Excellency Earl Cathcart, who gave specimens of it to the Commission; since then Mr. Wood, the late member for Kent, has kindly sent a mass of more than one hundred pounds weight. It is said to be spread over an area of several acres, and from the specimens received it is at least two feet in thickness. Its consistence is about that of the variety known as *mineral caoutchouc*. The consumption of this material in England and on the Continent for the construction of pavements, for paving the bottoms of vessels, and for the manufacture of illuminating gas, to which it is eminently adapted, is such that the existence of deposits of it in this country is a matter of considerable importance. A careful examination of the locality with regard to its extent, will be made during the ensuing season. The specimens in my possession contain from seventy-eight to eighty-one per cent. of combustible and volatile matter.

MINERAL SPRINGS.

In my Report for 1847–'8, I had occasion to describe the well-known Sour Spring in the vicinity of Brantford, which is remarkable for containing a large amount of free sulphuric acid. Since that time I have learned of the existence of several springs of a similar nature in the same portion of the country. One of these has been described by Dr. Mack of St. Catherines, in the British American Journal for July, 1849.

It is situated about a mile and a half above Chippewa, near the Niagara River, and fills a small basin which has no visible outlet. The water is described by Dr. Mack as intensely sour to the taste, and strongly impregnated with sulphuretted hydrogen. A qualitative analysis shewed that the acid was the sulphuric, and that no chlorine was present. Protosalts of iron, and small quantities of lime and magnesia were also detected. A specimen of this water was kindly furnished me by Dr. Sutherland, by which I was enabled to confirm the results of Dr. Mack, and to detect a portion of alumina, thus completing its resemblance to the water of Tuscarora, to which it seemed closely allied in the proportion of free sulphuric acid. Dr. Chase of St. Catherines, shewed me a specimen of water from a spring near to St. Davids, which was similar in character to the above, but less strong.

Another interesting locality of acid water occurs in that vicinity, which I had an opportunity of examining personally. It is upon the S. W. corner lot of the Township of Niagara, upon the land of Mr. McKinley, and near the margin of a small rivulet, which at the time (Oct. 15th) was dry, and showed in its bed, at the depth of three or four feet from the surface, the red and green variegated Medina sandstones of the region in place; they are covered by a tenacious yellow clay, in which the basin of the spring is formed. It is nearly circular, between three and four feet in diameter, and about thirty inches in depth. The water rises to within six or eight inches of the surface, and has no visible outlet, its level is said to be nearly the same throughout the year. It is

kept in constant agitation by the escape of considerable quantities of carburetted hydrogen gas, which burns with a bright flame on contact with a light.

The soil is devoid of vegetation for a distance of six or eight feet around the basin, yet there is a layer of black vegetable matter a few inches in depth, which covers the surrounding soil and extends to the very edge of the spring; small maples are growing near.

About twenty rods further up the stream, and at a level some feet above the basin, near to the course of the rivulet, was a bed of soft mud which had resulted from the drying up of a small pool. In a depression a small accumulation of water was found an inch or two in depth; it was very sour to the taste, and near it was a small hollow filled with a very acid mud, and exhaling an odor of sulphuretted hydrogen. I was informed that in summer, when the pool is quite dry, an inflammable gas issues copiously through fissures in the clay.

I collected some bottles of the water from the basin, and have since submitted it to a partial analysis. When recent, the water has a decided flavor of sulphuretted hydrogen, the odor of which is readily perceived in the vicinity of the spring. The water is slightly turbid and yellowish, and does not become clear by repose; its taste is styptic, and strongly acid.

The specific gravity at 60° was found to be 1002.16; the usual tests shew the presence in small quantities of lime, magnesia, alumina, and protoxyd of iron; the acid is the sulphuric, without any trace of hydrochloric acid. When evaporated at a gentle heat, the water leaves a moist residue, which blackens from the presence of an organic substance which exists in considerable quantity, and which has also been remarked in the acid water of Tuscarora, and by Dr. Mack in that of Chippewa. By ignition a residue was obtained of sulphates with oxyd of iron and alumina, which in two determinations equalled .580 and .620 for 1000 of the water; the same quantity gave .074 of lime, equal to .180 of sulphate. The sulphuric acid was found by two determinations to be 2.1308 and 2.1440, mean = 2.1376. Of this .106 are required to form gypsum with the .074 of lime, leaving 2.0316 of dry sulphuric acid, equal to 2.4887 of oil of vitriol. The residue of the solid matters equalling .420, and consisting in part of sulphates, would not correspond to the decimal part of that quantity; so that in round numbers the water will contain two parts of hydrated sulphuric acid in 1000. At a future time I purpose to make a complete analysis of the fixed ingredients of this spring.

It is interesting to remark, that this water collected in clean bottles, was found at the end of some months to contain abundance of small flocculi of an organic substance, which under the microscope appeared to consist of groups of filaments, each composed of a single chain of globular homogeneous and translucent vesicles of a yellow color. The existence and development of vegetable life in a solution of sulphuric acid and sulphates of iron and alumina, appears somewhat curious and worthy of record.

It is to be remarked in connection with the view suggested by me in my Report for 1847–'48, as to the relation between these springs and the gypseous deposits, that the first of those above mentioned, like that of Tuscarora, rises from the gypsiferous rocks, and that of Niagara from the upper portion of the Medina sandstones, to some portion of which formation the one nearest St. Davids will also belong.

INQUIRY RESPECTING THE POWER OF AGRICULTURAL SOCIETIES RECEIVING GOVERNMENT AID.

To the Editor of the Canadian Agriculturist.

Sir,

Being a member of an Agricultural Society which takes the *Agriculturist* I consider myself a subscriber to that interesting and instructive paper; I therefore take the liberty of applying to you for your opinion on a late proceeding of our Society, concerning which, I in common with some others have doubts as to its lawfulness, viz: Can an Agricultural Society allow its members (independent of their yearly subscription) to subscribe to a fund, the amount of such subscription being added in the list sent to Government to subscribers names, which after realizing the Government allowance, is spent in purchasing seed wheat to be divided between those subseribers to that fund; a separate list being kept by the Treasurer as a guide in the division.

This would certainly be a cheap way of getting our seed, if it is but lawful to draw the Government allowance for such a purpose, and the majority of our Committee say it is. But as I am not one of those who think that a majority must be right, I determined to apply to you for information, as one most likely knowing the rights of the case. Hoping you will give this your earliest attention and excuse my troubling you,

I am Sir,

Your obedient servant,

BACKWOODSMAN.

[An Agricultural Society receiving aid from the Government grant, has unquestionably a right to purchase either improved animals or new varieties of seeds, for the purpose of experiment, with a view to advance the agriculture of the District. But to purchase largely seed wheat for ordinary use, as a mere matter of business, and to devote a portion of the public grant towards

the payment for the same, appears to us not in accordance with the spirit of the law. The principal object of the public grant is to reward the producers of articles of merit, submitted to competition; and not to aid individuals in the ordinary affairs of business. The returns required to be made to the Board of Agriculture by the New Agricultural Bill, now before Parliament, will, if framed into a law, prevent the irregularity of which our correspondent complains, and several others, which we are informed have crept in under the present system.—EDITOR.]

"KNOWLSON'S COMPLETE FARRIER."

CONVULSIONS, OR THE STAG EVIL.

Of all disorders to which horses are subject, this is the worst, and is scarcely discoverable till the horse falls down raging mad. It seizes him all at once, without any previous warning. He raises his head, with his nose towards the rack, pricks up his ears, and cocks his tail. In this posture he continues, and those who do not understand the disorder never suppose that he ails anything of consequence. But other symptoms soon convince them of their mistake; for his neck grows stiff, cramped, and almost immovable; his jaws are locked and every tendon in his body becomes stiff. If he can get his mouth open, he will bite anything that comes in his way; and if he lives a few days in this condition, several knots will arise on the tendinous parts of it. Every muscle is so much cramped and extended, that the horse looks as if he were fastened to the place, with his legs stiff, wide, and staggering, and the skin drawn so tight over every part of his body, that it is almost impossible for him to move; and if you attempt to make him walk, he will be ready to fall at every step, unless he be well supported. At the same time his eyes are so fixed by the contraction of the muscles as to give him a dead look. He snorts and sneezes often, pants continually, and his shortness of breath increases till the distemper takes a favorable turn, or the horse falls down and dies.

CURE. In the first place bleed plentifully, unless the horse be old and low in flesh, or taken from some hard duty, and then you must not take so much blood. After bleeding, give the following ball, if you can get it in, but the horse is very often jaw-locked till nothing can be got in but a clyster-pipe put between his fore and axle teeth.

½ oz. of Assafœtida.
½ oz. of Gum Guaiacum.
½ oz. of Gum Camphor.

Make them up into a ball with honey, and give one of these balls every twelve hours, for two days, if you can get them in; and if not, dissolve them in a little hot beer, and give them with the clyster-pipe. (Be careful to powder the Gums.) Then make an ointment or lotion of the following.

1 oz. of Oil of Spike.
1 oz. of Oil of Amber.
1 oz. of Oil of Bricks.
1 oz. of Spirits of Sal Ammoniac.

Shake them well together, and rub the jaws just below the ears, where they lock into the upper chap; also rub the small of the back well, where the cross bones are fixed to the back bone.

In this, as in most disorders, the body should be kept gently open with laxative purges and emollient clysters. When the jaws are so locked that you cannot get anything in, do not open them by force, for that would increase the disorder instead of relieving it.

Sheep skins newly taken off, and laid with the flesh side to the horse, will sweat him greatly, and by that means draw a quantity of water from the blood, indeed, there are few things that will relieve a locked jaw more: but if they be laid on the loins, they must not lie above three hours at a time before they are turned with the wool side to the horse. You may keep the skins on twenty-four hours if you change sides every two or three hours.

If the horse cannot take either food or water in at his mouth, he must be supported by clysters, made of barley-water and milk, and given both at the mouth and the fundament. I once supported a large waggon-horse in this manner for twelve days, and he recovered.

Convulsions are caused by different things, but often by bots in the stomach; for these destructive vermin suck up the juices that should feed the blood, and bring it into a thin, bad state; indeed they are sure to destroy the horse by one means or other when there are a great number of them in the stomach. I therefore wish all who have a horse troubled with them, to destroy them before they destroy the horse.

When you suspect that these vermin are the cause of the disorder and they generally are, give the ball recommended to destroy bots. If the horse get better the first time, be sure to guard against a relapse, for you may depend upon it he will not get better a second time.

Tapping under the jaws, and at the breast, is sometimes of great service in this disorder, but I am of opinion that sweating with sheep skins will give relief much sooner. I wish to observe before I conclude this chapter, that the stiffness of the jaws continues after convulsions have ceased; in which case the following medicine should be given.

½ an oz. of Matthews' Pills.
½ an oz. of Assafœtida.

Make them into a ball, and give it twice, (one day between the doses,) and it will give relief.

FEVERS.

Horses are subject to few disorders which are not attended with more or less fever.

Causes. Fevers are often brought on by sudden heats and colds; by going out of warm stables into cold ones; by being clothed, and then having the clothes stripped off; by being turned out to grass; for many people turn their horses out to grass in the morning, and let them lay out, which is quite wrong: for when they are turned out to grass, to be there night and day, it is best to turn them out at night, for then they will graze all night; but if you turn them out in the morning, they will fill themselves in the day-time, and lie still all night, which is the way to catch cold. Most fevers are brought on by colds, therefore be careful to keep your horses as much as possible from catching cold.

Symptoms. The horse is remarkably restless, ranging from one end of his rack to the other; his flanks work, his eyes appear red and inflamed, his tongue is parched, and his breath hot and of a strong smell. He often smells at the ground, he loses his appetite, and though he will take hay into his mouth, he does not chew it; his whole body is hotter than usual, but not parched; he dungs often, but little at a time, and it is generally hard, and in small pieces; his urine is high-colored, and he generally stales with pain and difficulty; he is always craving for water, but drinks very little at a time; and his pulse is much quicker than usual.

Cure. Whenever a fever takes place, the first part of a cure is bleeding, and if the horse be strong and in good condition, the quantity should be two or three quarts. When this has been done give him a pint of the following infusion, three or four times a day.

4 oz. of Juice of Liquorice.
4 do. of Liquorice Root.
2 do. of Salt Peter.
4 do. of Salt of Tartar.
8 do. Good Raisins.
2 do. Aniseeds.
2 drams of Saffron

Boil all these together in six quarts of water, for ten minutes, let it stand till cold, and then strain it off. It is one of the best medicines for colds, coughs, hoarseness, or fevers, in either horse or man; and if it were more known, and more used, it would give greater relief in violent colds than anything yet found out. It is kind in its operations, opening the lungs, works gently by stool and urine, is free in its passage, and opening in its nature.

The horse should scarcely eat anything but mashes made of linseed and bran, and given in small quantities. If he refuses them, let him have dry bran sprinkled with water, and put a little hay into his rack, as a small quantity of it will not hurt him, and a horse will often eat hay when he will not eat anything else. His water should be rather warm, and given often but in small quantities; and clothing moderate, too much heat being pernicious in a fever. If he refuses his meat, do not let it lie before him, but take it away, and clean his rack and manger. If he be able to go about, a little walking exercise in the open air will be very proper, but you must be careful not to get him wet.

This method, with good nursing, will often be sufficient to restore the horse to health; but if he refuse his meat, more blood should be taken from him, and the drink continued; and if his dung be hard and knotty a clyster should be given.

Take Marshmallows and Cammomile flowers, a handful of each, boil them in three quarts of water till one quart is wasted; then strain it off, and add four ounces of Venice Treacle, and one pint of Pale Rape Oil.

The above will make three clysters, to be given at four hour's distance. If his pulse continue high and quick, give the following.

2 oz. of Nitre.
2 do. of Cream of Tartar.
4 do. of Glauber's Salt.
2 do. of Lenitive Electuary.

Dissolve them in hot water, give one half, and and the other half the day following. If the horse be very open in his body, you need not give the above: but if dry, be sure to give him it. If he be very open, give him four drams of bark in a gill of red port. By pursuing this method, the horse will begin to recover, and will relish his hay, though his flanks will continue to heave for a fortnight. Nothing more will be requisite to complete the cure than walking him abroad in the air, and giving him plenty of clean litter to rest on in the stable.

There is another and much worse kind of fever to which horses are very subject, and which often proves fatal if not properly treated, viz.

A COMPOUND FEVER.

Symptoms. The symptoms of this disease are —a slow fever, with great depression; and sometimes inward heat and outward cold and at other times heat all over, but not excessive. The horse's eyes are moist and languid; his mouth is continually moist, so that he is not desirous of drinking, and when he does drink, a very little satisfies him, he eats very little, and moves his joints in a loose, feeble manner, grating his teeth very disagreeably; his body is generally open, his dung soft and moist, and he stales irregularly, sometimes making little water, and at others a large quantity, which is of a pale color, and has very little sediment.

Cure. In the first place, take from the horse a moderate quantity of blood. Let it not exceed three pints, but repeat the operation according to its strength, if there be any tendency to inflamation; and after this the nitre drink already described may be given with the following addition.

1 oz. of Snake Root.
3 drams of Saffron.
3 drams of Camphor, dissolved in Spirits of Wine.

The horse's diet should be scalded bran; and linseed, boiled, and wrought up with bran. Also give him the best hay by a handful at a time. It is often necessary to feed him by the hand, for

sometimes he is not able to lift his head to the rack.

In this disease, drinking is absolutely necessary to thin the blood; and therefore if the horse refuse warm water he should be indulged with such only as has had the cold taken off. This may be done with a hot iron, or by letting it stand in the pail in a warm stable; and this will be better than forcing warm water on the horse's stomach. If this method do not prove sufficient, but the fever shall continue to increase, the following balls should be given immediately, as the danger augments every hour

1 oz. of Camphor.
½ do. Gum Myrrh.
1 do. Squills.
2 drams of Castor.

Make them up into two balls, and give one at night, and the other in the morning. If no better in a short time, give the following infusion.

1 oz. of Snake Root.
2 do. Gentian Root.
2 do. Lemon Peel.
2 drams of Saffron.

Boil these well together in three quarts of water, and give a pint once a day. If the above ball fail of success, give the following.

1 oz. of Camphor, dissolved in Spirits of Wine.
1 do. Sal. Ammoniac.
1 pint of good Vinegar.

Put them all together, and stir them about till the fume subside. This is for two doses to be taken a twelve hours' distance, diluted with water. There is not perhaps a more powerful and effectual medicine known than camphor in all kinds of putrid fevers, it being active, attenuating, and particularly calculated to promote urine and perspiration, the two principal outlets by which relief is obtained; and if this medicine were more often given than it is, it would be a greater credit to the farrier, and give greater relief to the horse.

If the horse be costive, the clysters, or an opening drink, should be given; and should he purge moderately, be careful not to suppress it; but if it continue so long as to enfeeble the horse, give him a little red port wine and bark.

Also observe to let the animal drink plentifully, for that will greatly promote the operation of the above named medicines, as both the disorder and the medicine will cause the thirst. If the horse can bear walking about, a little open air will be very proper, but be careful to keep him well covered.

Particular regard should also be paid to his staling, which, if it flow in too great quantities, must be repressed by proper astringents, and by giving him lime water; and, on the other hand, if he stale so little as to occasion a fullness or swelling in his body and legs, give him the following drink.

1 oz. of Nitre.
2 do. Castile Soap.
1 do. Venice Turpentine.
2 drams Oil Juniper,

Make them into a ball with liquorice powder, and give them at twice in twenty-four hours' distance. These balls may be given as occasion may require, and are very proper to convey off the greasy, slimy matter from the passage of the urine, and to settle swelled legs.

These are the best methods of management, and will generally prove successful; but sometimes art will fail, and the horse will discharge a greenish or reddish gleet from his nostrils, and sneeze very frequently; he will continue to lose his flesh, become hide-bound, refuse his meat, swell about his joints, and his eyes will appear fixed and dead; a purging also ensues, and a dark-colored fœtid matter is discharged. When these symptoms appear, the case may be considered desperate, and all attempts to save the horse will be fruitless.

In this disorder you must take care not to let the horse eat too much, for his diet should be light, and in small quantities at once, and increased gradually as he may gain strength. When his skin feels kind, his ears and feet continue moderately warm, his eyes look lively, his nose remains clean and dry, his appetite mends, he lies down with ease, and dungs and stales well, you may conclude that the danger is nearly over, and that nothing more is needful but care to complete the cure. On the contrary, by overfeeding you will run the risk of bringing on a bad surfeit, and the horse may be, according to the old saying,—*killed with keeping*.

Sometimes the fever returns; so that every one who has a horse in a fever should be careful of cold for some time after, as his blood is left in a thin bad state. His legs will probably be subject to swell; and if the swelling leave a dimple when you press your finger upon it, it is a sign of a dropsy; in which case it will be adviseable to put two rowels on each side of his belly, and to give him half an ounce of the best yellow bark every day for some time. At other times a fever leaves a running at his nose, of a thin yellow, glueish matter, and small swellings below his ears and chaps.

When you find these symptoms, give one ounce of crocus metalorum every day in a mash of bran, and rub the swellings with mercurial ointment.

In the years 1796, 1797 and 1798, a distemper prevailed among horses, attended with a strong fever, which in a few days turned to a putrid fever. Some horses had their eyes so much inflamed as to stand goggling out of their sockets; they had also swellings all over their bodies, and in two or three days dropped down dead. At that time I observed that the horses which had camphor given them got the best through. Some horses which had this distemper, have a relapse of it in the spring season; and it is difficult to eradicate.

Care should be taken to keep the head and throat warmer than common, as the kernels about the latter are swelled; and also to promote

a free perspiration, and to increase the running at the nose, which has the same effect in horses as spitting has in the human species; but never syringe the nose, as is often done to promote the discharge, for it has an effect quite contrary, and lessens the quantity of matter instead of increasing it; and checking the discharge of matter at the nostrils often causes swelling of the glands, and other bad consequences. Let me once for all remind you that all such discharges are critical, and thrown off by nature to free herself from the load that oppresses her, and consequently should by all means be promoted.

BROKEN WIND.

This disorder may sometimes be prevented, but cannot be cured; and it has hitherto been as little understood as any to which a horse is subject. People have had various opinions respecting its cause, and why some horses are more subject to it than others; but of all the opinions hitherto delivered, that of Mr. Gibson seems the best founded. He thinks that it is frequently owing to the hasty or injudicious feeding of young horses for sale; by which means the growth of the lungs is rapidly increased, and all the contents of the chest so much enlarged, that in a few years the cavity of the chest is not sufficient to contain them when they are expanded to perform their proper functions. Nor is this opinion founded upon bare conjecture, for horses that have died broken-winded have been opened, and the lungs and other parts found too large for the chest. But although hasty feeding is often the cause of this disorder, yet it is not always, for a narrow chest may cause it. It has been observed that horses rising eight years old are most subject to it. The reason of this is, because a horse arrives at his full strength and maturity at that age. At six he generally finishes his growth in height; then he lets down his belly, and spreads, and all his parts gain their full size; so that the pressure on the lungs and the midriff is now increased.

Also, when the horse catches cold and gets a dry cough, the lungs are much larger than they ought to be, and at that time riding sharply is enough to force the lungs so hard against the Midriff as to force a passage through it.*

A few years back some people pretended to cure the complaint by boring; but none were ever cured by it yet, nor ever will be. They made a hole above the fundament, to let out the wind that was forced through the midriff into the bowels; and this caused the horse to be continually discharging wind out of the place; so that the pretended cure was worse than the disease.

Dissection of horses that have died broken-winded, have sufficiently proved the truth of this observation; and that not only the lungs, together with the heart and its bag, were preternaturally large, but also the membrane which divides the chest; and that the midriff was remarkably thin. In some horses the disproportion has been so great that the heart and lungs have been almost twice their natural size, yet perfectly sound: and without any ulceration whatever, or the least defect in the windpipe or in its glands.

From these observations it abundantly appears, that the enormous size of the lungs, and other contents of the chest, by hindering the free action of the midriff, is the principal cause of this disorder; and as the lungs are found much more fleshy than usual, they must consequently have lost a greater part of their spring and tone.

Therefore, as this disorder is caused by the largeness of the lungs, we may conclude that it is one of those diseases which cannot be cured by art; and that the boasting of those who pretend to cure it are built on a sandy foundation. They may indeed relieve the complaint, but will never cure it, for an absolute cure is not in the power of any human being. All that I can do is to lay down some rules which have a great tendency to prevent this disorder, if pursued in time; and some remedies that will afford relief when it has taken place, and render the horse capable of performing good service, notwithstanding his misfortune.

Symptoms. The first symptom of a broken-wind is an obstinate dry cough, which is neither attended with sickness nor loss of appetite; but, on the contrary, with a disposition to foul feeding, eating the litter, and drinking large quantities of water.

Prevention. When a horse is troubled with an obstinate dry cough, and eats his litter, it will be necessary to bleed him, and to give him the mercurial physic already prescribed, repeating it two or three times. Afterwards give the following balls for some time, which have been found of very great service.

4 oz. of Gum Amoniacum.
4 do. Galbanum.
4 do. Assafœtida.
4 do. Squills.
½ do. Saffron.
6 drams of Cinnabar of Antimony.

Make the whole up into balls with honey and a little liquorice powder, and give one about the size of a pullet's egg every other morning. This is a very good ball for a dry cough.

Some horse-dealers give broken-winded horses a quantity of shot when they carry them into the market for sale, and I suppose it is to draw the bowels from the midriff, so that the disorder may not be discoverable; but at the same time there is great danger of killing the horse.

But it is not enough to give proper medicines; the horse's diet should also be carefully attended to at the same time, if we would hope for success. In order to this, the horse should eat very sparingly of hay, which, as well as his corn, should be wetted with chamber-lie, which is much better than water; and in this disease the horse is always craving after water. Chamber-lie is best for this purpose, because of the volatile salts

* The Midriff, or Diaphragm, is that which is commonly called the Skirts, and separates the Chest (where the lungs lie) from the Bowels.

which it contains, as they are a means of removing thirst. For the same reason, garlic is very efficacious in this disorder. Two or three cloves being given in each feed; or three ounces bruised, and boiled in a quart of milk and water, and given every morning for a fortnight, has been found very serviceable. So easy a remedy should never be neglected; for by warming and stimulating the solids, and at the same time dissolving the tenacious juices which choke up the vessels of the lungs, it greatly relieves this complaint.

Moderate exercise should never be omited; and although broken-winded horses are not able to endure much labor the first summer, yet many have been found less oppressed the second, and scarcely perceptibly affected the third, being then able to perform a long journey, and to endure great fatigue. A horse kept constantly in the field, when not at work, will be able to do good service for many years.

It may not be improper to observe that those who hope to cure a broken-winded horse, or even one that is troubled with an obstinate cough, by putting him to grass, will find themselves wretchedly mistaken; for on his being taken into the stable and fed with dry meat, he will be much worse than before; and some that had only a dry cough when they were put to grass, have returned broken-winded. Therefore always remember that if you cannot keep a horse of this description constantly abroad, it is best not to put him to grass at all, as instead of curing, it will tend to augment the disorder.

In short the grand secret of managing horses of this kind, consists in having particular regard to their diet and exercise. A moderate quantity of hay or corn, and water, should be given at a time, and the former constantly moistened, to prevent their wanting too much of the latter. They should have moderate exercise, but never any that is violent. By this method, and giving the following ball once every fortnight or three weeks, the horse will be able to do good service for many years.

6 drams of Socotrine Aloes.
2 do. Myrrh.
2 do. Galbanum.
2 do. Ammoniacum.
2 oz. of Bayberries, in powder.

Make the whole into a ball with a little oil of amber, and a sufficient quantity of syrrup of blackthorn. This ball operates so gently that there is no need for confinement, except a little the day following that on which it is given. The horse must have warm mashes and warm water, and the utmost care must be taken to prevent his catching cold.

THE FLAX-COTTON REVOLUTION.

From the N. Y. Tribune.

Although I have not yet found time for a careful and thorough examination of the machinery and processes recently invented or adopted in Europe for the manufacture of cheap fabrics from Flax; I have seen enough to assure me of its value and importance. I have been disappointed only with regard to machinery for Flax-Dressing, which seems on a casual inspection, to be far less efficient than the best on our side of the Atlantic, especially that patented of late in Missouri and Kentucky. That in operation in the British Machinery department of the Exhibition does its work faultlessly except that it turns out the product too slowly. I roughly estimate that our Western machines are at least twice as efficient.

M. Claussen is here, and has kindly explained to me his processes, and shown me their products. He is no inventor of Flax-dressing machinery at all, and claims nothing at all in that line. In dressing, he adopts and uses the best machines he can find, and I think is destined to receive important aid from American inventions. What he claims is merely the discovery of a cheap chemical solvent of the Flax fibre, whereby its coarseness and harshness are removed, and the fineness and softness of Cotton induced in their stead. This he has accomplished. Some of his Flax-Cotton is scarcely distinguishable from the Sea-Island staple, while to other samples he has given the character of wool very nearly. I can imagine no reason why this cotton should not be spun and woven as easily as any other. The staple may be rendered of any desired length, though the usual length is about two inches. It is as white as any cotton, being made so by an easy and cheap bleaching process. M. Clausen's process in lieu of rotting requires but three hours for its completion. It takes the flax as it comes from the field, only somewhat dryer and with the seed beaten off, and renders it thoroughly fit for breaking. The plant is allowed to ripen before it is harvested, so that the seed is all saved, while the tediousness and injury to the fibre, not to speak of the unwholesomeness of the old fashioned rotting processes are entirely obviated. Where warmth is desirable in the fabrics contemplated, the staple is made to resemble wool quite closely.—Specimens died red, blue, yellow, &c., are exhibited to show how readily and satisfactorily the flax-cotton takes any color that may be desired. Beside these lie rolls of flannels, feltings and almost every variety of plain textures, fabricated wholly or in good part from flax as prepared for spinning under M. Claussen's patent, proving the adaptation of this fibre to almost every use now subserved by either cotton or wool. The mixtures of cotton and flax, flax-cotton and wool, are excellent and serviceable fabrics.

The main question still remains to be considered—will it *pay?* Flax may be grown almost everywhere—two or three crops a year in some climates—three times the present annual product of cotton, flax, and wool, all combined, could not easily be produced even next year. But unless cheaper fabrics, all things considered, can be produced from flax cotton than from the Mississippi staple, this fact is of little worth. On

this vital point I must of course rely on testimony, and M. Clausen's is as follows:

He says the flax-straw, or the ripe dry plant as it comes from the field, with the seed taken off, may be grown even here for $10 per ton, but he will concede its cost for the present to be $15 per ton, delivered, as it is necessary that liberal inducements shall be given for its extensive cultivation. Six tons of the straw or flax in the bundle will yield one ton of dressed and clean fibre, the cost of dressing which by his method so as to make it Flax-Cotton, is $35 per ton.—(Our superior Western machinery ought considerably to reduce this.) The total cost of the Flax-Cotton will be $125 per ton, or 6 cents per pound, while Flax as it comes from the field is worth $15 per ton; should this come down to $10 per ton the cost of the fibre will be reduced to $95 per ton, or less than five cents per pound. At that rate, good 'field hands' must be of rather slow sale for Cotton planting, at $1000 each, or even $700.

Is there any doubt that Flax-straw may be profitably grown in the United States for $15 or even $10 per ton. Consider that it has been extensively grown for years, even in our own State for the seed only, the straw being thrown out to rot and being a positive nuisance to the grower. Now the seed is morally certain to command, for two or three years at least, a higher price than hitherto because of the increased growth and extended use of the fibre. Let no farmer who has Flax growing be tempted to sell the seed by contract or otherwise for the present; let none be given over to the tender mercies of oil-mids. We shall need all that is grown this year for sowing next Spring, and it is morally certain to bear high price even this Fall. The sagacious should caution their less watchful neighbor on this point. I shall be disappointed if a bushel of Flax-seed be not worth more than two bushels of Wheat in most parts of our Country next May.

Our ensuing Agricultural Fairs, State and local, should be improved for the diffusion of knowledge and the attainment of concert and mutual understanding with regard to the flax culture.—For the present at any rate, few farmers can afford or will choose to incur the expense of the heavy machinery required to break and roughly dress their flax so as to divest it of four-fifths of its bulk, and leave the fibre in a state for easy transportation to the central points at which flax cotton machinery may be put in operation. If the flax straw has to be hauled fifty or sixty miles over country roads to find a purchaser or breaking machine, the cost of such transportation will nearly eat up the proceeds. If the farmers of any township can be assured beforehand that suitable machinery will next summer be put up within a few miles of them and a market there created for their flax, its growth will be greatly extended. And if intelligent, energetic, responsible men will now turn their thoughts toward the procuring and setting up of the best flax-breaking machinery (not for fully dressing but merely for separating the fibre from the bulk of the woody substance it incloses) they may proceed to make contracts with their neighboring farmers for flax-straw to be delivered in the autumn of next year on terms highly advantageous to both parties. The flax thus roughly dressed may be transported even a hundred miles to market at a moderate cost, and there can be no reasonable doubt of its commanding a good price.—M. Claussen assures me that he would now buy and profitably almost any quantity of such flax if it were to be had. The only reason, he says, why there are not now any number of spindles and looms running on flax-cotton is the want of raw material. (His patent is hardly yet three monts old.) Taking dressed and hatcheled flax, worth seven to nine cents per pound, and transforming it into flax cotton while cotton is no higher than at present it would not pay.

Of course there will be disappointments, mismistakes, unforeseen difficulties, disasters, in flax growing and the consequent fabrications hereafter as heretofore. I do not presume that every man who now rushes into flax will make his fortune; I presume many will incur losses. I counsel and urge the fullest inquiry, the most careful calculations preliminary to any decisive action. But that such inquiry will lead to very extensive flax-sowing next year,—to the erection of flax-breaking machinery at a thousand points where none such have ever yet existed—and ultimately to the firm establishment of new and most important branches of industry, I cannot doubt. Our own country is better situated than any other to take the lead in flax-business: her abundance of cheap, fertile soil, and cheap seed, the intelligence of her producers, the general diffusion of water and steam power, and our present superiority in flax-breaking machinery, all point to this result. It will be unfortunate alike to our credit and our prosperity if we indolently or heedlessly suffer other nations to take the lead in it.

P. S. M. Claussen has also a Circular Loom in the Exhibition, wherein bagging, hoisery, &c., may be woven without a seam or anything like one. This loom may be operated by a very light hond power, (of course steam, or water is cheaper,) and does work rapidly and faultessly. I mentioned this only as a proof of his inventive genius, and to corroborate the favourable impression he made on me. I have seen nothing more ingenious in the immense department devoted to British machinery than this loom.

I understand that overtures have been made to M. Claussen for the purchase of his American patent but as yet without defined result. This, however, is not material. Whether the patent is sold or held, there will next year be parties ready to buy roughly dressed flax to work up under it, and it is prepararion to grow such flax that I am urging. I believe nothingmore important or more auspicious to our farming interests has occurred for years than this discovery by M. Claussen. He made it in Brazil while engaged in the growth of cotton. It will not su-

persede cotton, but it will render it no longer indispensible by providing a substitute equally cheap, equally serviceable, and which may be grown almost everywhere. This cannot be realized too soon.

G.

Hints on laying down Land to Permanent Pasture.—It is highly important that the land should be cleaned from weeds, and well pulverised by repeated ploughing and harrowing before the seed is sown; and in cases where the soil is particularly loose and sandy, it is desirable that it should be also rolled before sowing; if this is not effected, the seeds (many of which are very minute) will some of them be too deeply imbeded in the soil, while others may not be covered at all. It is also desirable that the seeds should be sown when there is not much wind, and that they should be delivered from the machine or the hand placed rather near to the soil; otherwise, the smallest and most valuable of the seeds may be carried by the wind into the adjoining field or hedge-row. The harrows, which should be very light, must be again drawn over after sowing, and if the soil is very light and dry, the roller also; and if the soil is poor, a dressing of Peruvian guano, or superphosphate may be harrowed in with the seeds, at the rate of two hundred weight per acre. The sorts of seed should, of course, be selected in accordance with the nature of the soil, and the purposes for which the pasture is intended; this and much other useful information may be obtained from Low's "Elements of Agriculture," Stephen's "Book of the Farm," Sinclair's "Hortus Grammiensis," and other works; or from seedsmen and agriculturists, who have paid especial attention to this part of botany and agriculture. If corn is sown with the grass seeds, it should not be more than 1 bushel or 1½ bushel to the acre of corn, and for this purpose oats are preferable to barley. *On improving old pastures.*—Having as far as possible eradicated the strong growing weeds, and coarse grasses, and improved the condition of the land according to its requirements, if any, heavy harrows should be drawn over the old turf early in the spring, to loosen the soil for the admission of seeds of the finest and most nutritive kinds of perenial natural grasses and clovers, which if sown freely, will occupy the numerous small interstices between the plants of grass already growing, and thereby prevent the luxuriant growth of coarse grasses and noxious weeds. It is a good practice to sow these seeds at the same time as the top dressing is applied; but this is by no means necessary.—(*From Sutton's Catalogue of Natural and Artificial Grasses.*"

"Italian Ryegrass is not well adapted for growing *alone* as a crop for *soiling*, and should always be grown as a mixture. If it is seldom or never obtained pure, even from Italy; and when grown for a number of years in this country, the plant degenerates, loosing a part of that vigorous growth, which is one of its own characteristics. If intended for soiling, it should be sown without a cereal crop, giving two bushels of seed per acre, with or without a mixture of clovers, adding either two or three pecks of rye, barley, or oats, with one peck of tares per acre, preferring rye. We would consider September too late to sow it in Scotland, except under the most favourable circumstances. We have seen it sown with advantage in August after a plain fallow, but where the land is thoroughly prepared, we would prefer the end of March or beginning of April. Where intended for irrigation, it should cut before the cereal plants shoot out. The obtaining one or more cuttings the first season, is entirely dependent on situation, condition, irrigation, and period of sowing. Under favourable circumstances, we would consider that two cuttings would not be too much to expect the first season if properly managed. As this grass has been largely and successfully grown by several farmers of the west of Scotland, and also in some districts of England, we would be glad to have their experience as to the best modes of growing for soiling.—*The North British Agriculturist.*"

A good way of Painting Farm Buildings.—Having some years ago, to superintend the erection of a great number of farm-buildings, and it being the particular wish of the nobleman on whose estate they were built, that they should be rendered as durable as the material employed would admit, viz., timber in all parts, with the exception of the roof and foundation, I had all the body of the buildings done over with a mixture of gas-tar, two parts; pitch, one; the other part half quick-lime and common rosin, put on quite hot; it requires two coats at least; three is better, the first to be perfectly dry and hard before the second application; while the last coat was still soft I had dashed on it, with a trowel, well washed sharp sand, or more properly minute flint stones, which remained after several washings; this we managed by the assistance of a fine wire sieve and a stream of water with a good fall; this forms a perfect stone face to the timber; and from the appearance of them when I last saw them, they were likely to last many years longer. The sand contain no stone more than 3 lines in diamaer, in fact, if all the earth is washed out the smaller the better. The window frames and doors were done over with the commonest paint I could get in London, a stone-colour, three coats, besides the priming; the paint mixed thick, and dashed over in the same manner as the rest of the building with a still finer sand; this also appeared to stand well; the sand must be made perfectly dry before it is used. The expense I cannot exactly state, as I cannot my hand on the book just now, but I know it was not much, and has given satisfaction. It is right to state that the wood-work must be perfectly dry and well seasoned before this mixture should be applied; it is better to wait a year to effect this end than put it on a green wood.—*Farmer's Herald.*"

Management of Manure.—I make it a practice, during the spring and summer months, to get the parings of ditches, and any other spare earth or mould to be had on the farm, carted into a heap, as near as possible to the cow-sheds, and make up so as to turn off the rain; and when the cows are bedding down I have a quantity of the same strewn immediately behind the cows, which effectually soaks up every drop of urine that comes from them. In the cleaning out of the sheds this becomes mixed up with the solid manure, and occasionally there is a layer of about 6 inches of the dry earth spread over all; and I have found by this means my manure heaps to accumulate amazingly, and to be greatly improved in texture; and there is seldom any of that coloured matter, which is well known to be the farmer's best friend, to be seen oozing from the sides of a heap made up after the above manner, although I have had them 8 feet high; but then we have gutters to our sheds, and they are not allowed to run into our dung-pits.—*Gardiner's Chronicle.*"

SONG OF THE SOIL.

I start the bulb of the beautiful flower,
And feed the bloom of the wild wood bower;
I rear the blade of the tender herb,
And the trunk of the stalwart oak I curb;
I force the sap of the Mountain pine,
And bend the tendrils of the vine;
I robe the forest and clothe the plain,
With the ripest of fruits and richest of grain.

The cheek of the peasant I paint with health,
And yield the sturdy yeoman wealth;
I give to the spirit of commerce wings,
And prop the tottering thrones of kings.
The gorgeous palace and humble cot
Owe every atom to me they've got;
And the prince at his banquet, the hind at his board,
Alike must depend on the fare I afford.

Man may boast of his creaturely might—
His talents in peace and powers in fight;
And lord it over the beast and bird,
By the charm of his touch and the spell of his word.
But I am the sole and mighty source
Whence flows the tide of his boasted force—
Whatever his right and whoever he be,
His pomp and dominion must come from ME.

I am the giver of all that's good.
And have been since the world has stood.
Where's the wealth, on ocean, or beauty on land,
But sprung from the warmth of my fostering hand?
Or where's the object fair and free,
That claims a being, but's traced to me?
Cherish, then cherish, ye sons of toil,
The wonderful might of the fruitful soil!

And whence, says the Christian, dost thou obtain
This power so mighty, of which thou art vain?
Thou boastest of that which is furnished to thee
By Him who is Lord both of land and of sea;
For know that the treasures which come from thy sod
Are only thine own as the gift of thy God.

HINTS TO FARMERS.

Tomatoes make excellent preserves.

Toads are the very best protection of cabbage against lice.

Plants, when drooping, are revived by a few grains of camphor.

Pears are generally improved by grafting on the mountain ash.

Sulphur is valuable in preserving grapes &c. from insects.

Lard never spoils in warm weather, if it is cooked in frying out.

In feeding with corn 60 lbs. ground goes as far as 100 lbs. in the kernel.

Corn meal should never be ground very fine. It injures the richness of it.

Turnips of small size have double the nutritious matter that large ones have.

Ruta Baga is the only root that increases in nutricious qualities as it increases in size.

Sweet olive oil is a certain cure for the bite of a rattlesnake. Apply it internally and externally.

Slanderers are like flies that pass over all man's good parts to light, only upon his sores.

TURNIP FLY—(Haltica Nemorum.)—This insect (beetle) is one of the most formidable enemies to the turnip crop. It appears and continues during the whole of spring and summer. Danger is only to be apprehended in the early stages of the turnip's growth before the third and fourth leaves have been fully developed. Every endeavor should be made to force on the young plants, by means of manure. The liquid portion of stable manure is most favorable to their rapid growth. To drive away the fly, many farmers sprinkle their young turnip crops with soot; urine and the ammoniacal liquor of the gas works would be found equally efficient in preserving the plant from its depredations. The turnip-fly is seldom seen during the day time; it then occupies the under surface of the leaf.—When the sun has set, the fly may be found in abundance on the surface. The sense of smell of this beetle is remarkably acute; it can discern the odour of the turnip—its favorite food—at a great distance. Hence the reason why the odour of soot, uriue, and ammonical liquor of the gas works is repugnant to the delicate sense of smell possessed by this minute and destructive beetle.

NOVEL KIND OF MANURE FOR POTATOES.—A few days ago, while passing a farm-house a little to the south-west of Kirkcudbright, the farmer said he had just been paying two killers of vermin who had been on his premises two days and three nights during which time they had destroyed 136 rats many of them very large. The bodies of the voracious plunders were placed in four drills, and first early potatoes planted on them. This is certainly a novel mode of high gardening, and an abundant crop is expected. Four months ago the same expert trappers of vermin killed 200 rats on the same farmer's premises.—*Corres. of Courier.*

CERTAIN CURE FOR FOOTAIL IN SHEEP.—The following receipt was handed to me by Thos. Wilkinson, in England. I tried it successfully myself, and feel confident in recomendiug it as an effectual cure for this troublesome disease.

Take of quicksilver, one ounce, aquafortis, (nitric acid,) two ounces, and put them together in a glass bottle; place it in the sun, or in a warm place, with the cork out, till dissolved, when it is ready for use; cut the hoof away, as far as the foot is diseased; dip a feather in the mixture, and be careful to anoint the diseased part all over. After this, keep the sheep in a dry place for eight or ten hours. They seldom require more than one dressing, if properly done. It will be necessary, also, to wet the feet of the sheep not diseased, with turpentine, to prevent it spreading further amongst the flock.

Miss Clark of Claremont, in the Township of Colborne, made last week nine lbs. of Butter off the half breed Durham cow, Polly, that took the first premium in 1848, at the Huron District Agricultural Society's show.—*Huron Signal.*

BEAT THIS WHO CAN.—On the 4th of June instant, Mr. Andrew Hope, Farmer near Perth, and a member of the Perth Agricultural Society, sheared off from one Ram, called 'Messenger,' of the Leicester breed, 12½ lbs. of wool, of a quality seldom equalled—being particularly fine. The fleece nearly all averaged from 8 to 9 inches in the length of the wood.—*Bathurst Courier.*

CANKER IN FRUIT TREES.

We take the following observations from *Morton's Cyclopedia of Agriculture*, part 6th; an original work, now publishing, of great merit, bringing down all information relating to agriculture and rural affairs to the latest moment. The work may be procured, as published, of Mr. Maclear, bookseller, of this city, or through any of his travelling agents.

Canker is a word applied by nurserymen to almost every case in which a greater or less portion of a vegetable, of whatever size, loses its vitality from some latent disease which ultimately destroys the parent stock. Thus, we hear constantly of the canker in auriculus, melons, cucumbers, &c.; in forest trees; or, what more immediately concerns ourselves, in apple and pear trees, and occasionally in cherries, apricots, and peaches, though the disease is then more usually called gumming, from the peculiar character which it assumes. It is very probable that the maladies which pass under the name are of various kinds, but we shall confine our observations to the ravages committed in orchards and gardens, and it will be seen that many similar cases are likely to occur amongst herbaceous plants.

Every cultivator of apples and pears, on however small a scale, is soon aware, that with all his care, many of his trees become unhealthy.—Single branches of recent growth at first wither and die, without any apparent cause. The bark which we believe is the seat of the malady, is often loose upon the shoots, especially towards the base, but not invariably; for in the same shoot, that on the upper part is often firm, while that on the lower is easily detached. The line of junction between the dead and living parts is often accurately defined; ane there are seldom any fungi present, except on those parts where the bark remains firmly attached. If the dead portions are not cut off, the disease rapidly spreads to the contiguous parts, and, after a few years, the tree entirely dies, or is so unsightly and unprofitable, that the cultivator is glad to root it up. Various reasons have been assigned for the malady, but none at all satisfactory or generally applicable. The truth seems to be—judging from the well-known fact, that certain varieties are far more subject to the disease than others; some indeed, so much so, that it is impossible to cultivate them with success for any long series of years—that it is caused from lowness of temperature, accompanied by wet weather, above or below the level of the soil. Each cell of a plant, or any quantity of cells, may, in a certain sense, be considered independent of the rest; and causes which, at a given time, affect one cell or contiguous set of cells, may not affect the rest. The health of this isolated part is deranged, disease is set up, and ultimately, decomposition takes place; and, according to the law of nature, which has been so well illustrated by Liebig, where decomposed matter exists in contact with healthy, the contact rapidly communicates the disease; and thus, if several sets of cells were influenced at the same time, the disease may rapidly extend within a given branch, or down one side of a branch, the bark on the other side remaining comparatively healthy, without exhibiting any striking external indications, till after a hard winter, or series of cold ungenial weather coming in aid of the disorganization already established, the portion of bark which carried on a sluggish vegetation fails, and the whole branch seems, as if by some sudden stroke to pass into decay. That some thing of this kind takes place, appears probable from the fact, that in the same garden, trees on the walls will be healthy, while others of the same kind, less tenderly treated, will fail. It seems quite certain that, under the best system of cultivation, and under the most favourable circumstances of soil, drainage, and temperature, the disease is proportionably mitigated, even in the sorts in which, from tenderness of constitution, the tissues are easily influenced; but in those in which it is clearly hereditary, the balance of conditions necessary for healthy growth is so easily disturbed, that the greatest care and skill, and the most favourable circumstances, will not greatly modify or entirely prevent it.

The grand point in laying out orchards and gardens, is, to ascertain what sorts are most exposed to canker in any particular district, and to avoid them carefully; as the result of any extensive plantations, made without due caution in this respect, is sure to be disappointment and loss. Having ascertained this point by personal observation, care must be taken to select a situation as little exposed as possible to chilling winds; the ground must be well drained and the heads kept thin, that every portion may be well exposed to light; for it is a well ascertained fact that the disease often commences in ill ripened wood. If, however, unhappily a bad assortment was originally made, and the complete destruction of the orchard is out of the question, close pruning of all ill ripened shoots, and the covering with clay extensive cankered patches—which have been previously well cleared out with the knife, so as to promote the growth of healthy tissue from the edges—may be used as a mitigation of the evil, though nothing will entirely root it out.

Canada.

THE CANADIAN TIMBER TROPHY.

(*From the Illustrated London News.*)

We do not pretend that the Canadian timber pyramid with its white birch bark canoe on top, and green draperies, as if in memory of the for ever departed leaves of its logs, forms a very ornamental object in the English end of the centre aisle; and in truth, at first we many times wished it at the back of the bay. By degrees, however, the appropriateness of its position has grown upon us. We have looked around on all the thousand gatherings of trade brought by wind or steam in huge ships from every seaboard in the world, and then at the canoe rightfully raised to view above them all: for in such frail vessels the first traders of the world paddled from creek to creek, and island to island exchanging fruits and skins, clubs and bows and arrows: and from such rude beginnings grew the spirit of enterprise, the desire of commerce, the daring love of sea adventure that now crowd the waters with the commercial navies of the world; from that shell of stitched bark has man by invention and indomitable industry, risen to his steam ship, conquering not alone the wind and waves but time and distance; and for the timber, although it does obstruct the view, and make but an uncouth sort of pile, it too is there rightfully enough, reminding us that even England a few centuries ago, was thick set with forests, and that the first work towards her present busy industry was to fell the old timber, and let the sunlight warm the earth. Man is no dweller in the woods; go where he may, the forest must bow before him: he clears a field for himself, and drives the plough into the soil, grows crops of annual provender for himsef and his beasts of burden and fills the land with busy multitudes. We would have the visitors of the Exhibition therefore, pause a little by the timber trophy; it may remind them of the settlers in those regions—of those who go forth to found fresh centres of commerce: to face in strength of the hope of independence, the toils and difficulties of planting new regions. There is a log hut look about the timber trophy that takes us to the back woods of Canada; to the prairies of the United States, and the vast park-like sheep ranges of Australia. In their new homes the industry that has felled the woods will push it away—will not alone grow corn and feed cattle and trade in timber, but will raise up mineral products from the earth's depths, and call machinery to its help, and organise industry, and have one day a thousand fruits of skill to show at some future Exhibition.

We have not yet had possession of Canada for a hundred years. It is set down amongst the discoveries of Sebastian Cabot in 1447. The French, it is asserted, made a map of a portion of the coast in 1508; in 1525, the country was formally taken possession of in the name of the King of France; in 1535, Cartier explored its river, and named it the St. Lawrence, from having on that saint's day first sailed upon its waters. The first settlement was in Quebec in 1608, and the country remained in possession of the French until the capture of that city by General Wolfe, in 1759; and by the treaty of Paris in 1763, the whole territory, comprising an area about three times as large as great Britain and Ireland, was ceded to England.

The Canada contributions at the exhibition, to be seen in the compartments opposite the timber trophy and a general view of which we have already given, are in themselves sufficient evidence, that, in this England beyond the Atlantic, not alone land industry, but manufacturing skill and art-workmanship, have made progress; but still, vast regions even of the best lands are covered with forests. In 1844, the occupied land in East or Lower Canada amounted to 7,540,450 acres; of which 3,083,950 were cultivated, and 4,456,400 still unreclaimed and overgrown with wood. The great plain between Lakes Huron, Erie, and Ontario, comprising about 20,000 square miles, and the best grain country of any of the northern parts of America, is still for the most part covered with lofty forests. The Ottawa or Grand River, which joins the St. Lawrence near Montreal, forms almost entirely the division of the Canadas, and is the great highway so far of the timber trade, which along its banks employs from eight to ten thousand men—an army waging perpetual war with the forests, and which, under the false impulse of our former high differential duties in favour of Canadian timber, carried on its operations most wastefully and unfavourably for the character of the timber and the advance of the trade. Hitherto, white and red pine have formed the chief timber exports of Canada, felled mainly by the banks of the Ottawa, and floated in huge rafts down that river and the St. Lawrence, a distance of from 600 to 700 miles to Quebec. A single raft of timber will not unfrequently have a surface of three acres. The trees are cut down in winter, lopped, squared, dragged by horses over the frozen snow, which forms a slide for them to the water's edge. The rafts are formed upon the ice, on which when the spring thaw sets in, the lumberers, as these forest felling timber traders are called, float down to port, anchoring when they come within range at each rise of tide, and again pursuing their voyage at its fall. A raft seems almost as if some land-slip, or island, huts and all, were sailing down the river; it has five or six houses upon it, and when the wind sets fair, a range of broad thin boards serves for sails. Some of the white pine trees yield planks five feet in breadth, and the largest red pine will give 18-inch square logs, as much as 40 feet long. Of the red pine order is the hemlock a ship's futtock of which is seen in the trophy, and which it is said bears water well, and is of all the woods in those regions the most everlasting as railway sleepers, piles, or for any other underground purpose. But a single tree of the kind, which stands on a little island in the river St. Maurice, is to be found in all Eastern Canada.—The tree in close forests is drawn up frequently to more than sixty feet in height, but its best height is about 40 feet, and its diameter in such specimens is rather more than 2 feet. The specimen in the trophy was cut from a tree 15 feet in circumference and 50 feet high. Close by this hemlock is a thick plank of a beautifully feathered and highly polished dark wood, cut for veneers, from the fork of a black walnut—a timber extensively used in Canada for furniture, and some beautiful tables, sofas, chairs, beds, and a piano of which are in the compartments opposite them, and to be sold at the close of the Exhibition.—The tree from which this plank was obtained was an old giant of its kind, and judged by its size and internal appearance, though scund as a bell, had probably spread up its evergreen leaves to the sun for more than a thousand years. It stood in the valley of the Nanticoke, in the township of Walpole; and in the winter of 1847, Mr. Fisher having marked it for destruction, set up a shanty near it. Its circumference at the ground measured 37 feet, three feet up 28 feet, from which it tapered very little to 61 feet, where it branched into two trunks, 6 feet and 5 feet in diameter;

from this part the veneer plank was sawn. The whole tree cut up into 23 logs, and made in all more than 10,000 feet of timber. Three men were engaged a fortnight in felling and trimming this single tree. The walnut is a hard, close-grained wood, and it deserves trial, as it is to be had in immense quantities all over Canada, whether it would not serve as well as mahogany for ship building. It is exported to the United States, but has not as yet entered into the timber trade with England. Another furniture wood in the trophy is curled maple in its wavy grain very like satin wood, not much differing from it in colour, and growing abundantly as the pine itself. It has also found its way to the United States largely, but in small quantities to England, though it is a hard wood, and admirably adapted for furniture. A bird's eye maple veneer is also shown. The finest bird's eye is from young trees of from twelve to fourteen inches diameter. As they grow old and large the spotted curl dies out from the centre; the veneer in the trophy was, however, shaved off from a large old tree by a peculiar kind of cutting machine, which saws or shaves off the veneer in a spiral round the log, commencing at the outside, and stopping where the bird's eye pattern ceases. There are, besides, two other sorts of maple shown, the plain hard maple, used largely in house building, ordinary furniture, and immense quantities for domestic firewood and steamboats. In Montreal alone there are consumed in a single season from 2,000,000 to 3 000,000 cords of firewood—a cord of wood being a bundle eight feet long, four feet high, and four feet broad, and costing thirteen shillings English money. Each family on an average uses about 20 cords in a season. The soft maple is but rarely cut down, *as it supplies sugar abundantly.* In spring, before the snow has left the ground when the sun begins to gain strength, and there is still a sharp morning frost, the farmer bores, about four or five feet up the trunk, a hole some two or three inches deep, and sticks a little cane spout in it. In a few hours he has in his wooden trough below from two to three gallons of sap; and every morning for a fortnight as the sap rises with the sun, the tree pours its sweetness until twenty or thirty gallons are collected. In a spring without frost the supply of sugar fails and its collection is a work of no small hardship. Its after preparation is a rude process; it is evaporated to some extent, over a slow fire, and then poured out in pans to cool. The sugar maple grows from forty to fifty feet high and about six feet in circumference. The other timbers in the trophy are more generally known. The birch tree a favourite town plantation, is used in common furniture, and the timber is largely exported to the States. The oak, both white and red, is exported as staves both to America and England, and so is the ash of which Canada can furnish inexhaustible supplies. The basswood is new to us, but, it seems, has been proved so useful at home that it may be imported with advantage. It is a soft wood, but close grained and durable, something resembling our willow, and has been found most excellent in doors, and the pannelling of railway carriages. The rock elm is also a new import; it grows apparently from the bare rock to a height of 30 to 60 feet, and 18 to 20 inches in diameter, a tough durable wood, and deserving trial for ship-building purposes; and the butter-nut growing on fine dry land, and most of all a favourite, both in the States and Canada, for veneering upon, as with ordinary seasoning it is never known to warp. Last on our list is a little log on the floor, with light edges and a dark centre, marked iron-wood, of no earthly use, said our *native informant:* "It wont float, it's the contrariest wood in creation; if you want a straight piece, and half break your heart with hard work to get it, it will twist itself crooked in no time, and if you make out a crooked piece, as sure as sunshine it will stretch out as straight as a line, it's hard as iron and as heavy as lead, and as obstinate and cranky as a old mule, and never worth either letting grow or cutting down."

Our contemporary of the *North American* commenting on the above article says :—

[We should like to see some of the sugar made, as the *News* informs us, from "soft maple." We recollect an incident which occurred a few years ago, when we, instead of sitting in the Editorial chair, were at work in the "Sugar bush." An English Gentleman, travelling through Canada, visited the "Camp" to see how sugar was made. The "tapping" process was explained to him, the sugar maple pointed out, the mode of "boiling down," "sugaring off," &c. After some time he took up an axe, and with a friend equally verdant, started out to try his hand at "tapping." He selected a large pine, which stood in the vicinity, and hacked away until the turpentine oozed forth to his infinite delight. He was not a little surprised however to find the juice so thick without boiling, and "so slightly sacharine!" Now, this gentleman, or some one of about equal experience, must have been the *News'* "native informant." The rigmarole about the "iron wood" is nearly as wide of the mark.—Ed. N. A.]

The Art of Flying.—A French journal has a letter from Madrid giving an account of a successful experiment with a new apparatus for flying. The flyer was a Miss Junita Perez, who though rather fat and corpulent, moved through the air, by the help of the wings, with great ease and rapidity. She was advertised to fly a distance of above 1200 feet, rising in the air above 600, but exceeded the programme both in height and distance. No description of the structure of the wing is given. They have a spread of some 15 feet, are fastened by ligaments of great flexibility, and arranged so as to move with great rapidity; they make a noise like a wind-mill. The astonishment of Madrid at so novel a phenomenon is described as immense.

A Mr. Thos. Darville, at Paris, also announces that he has invented a complete apparatus for flying, and that he proposes to exhibit at the Champ de Mars in the course of the present month, when he will fly from the Military School to Challiot. He will be accompanied by his two sons, one of 22 and the other of 17 years. The preparation of three sets of wings has delayed the exhibition until now. The inventor has tried his apparatus privately, with complete success, having flown across the Seine with it at 1 o'clock in the morning. His wings have a spread of 15 feet, and by their help the flyer can move up and down in the air with all the facility of a swallow, skimming along near the ground, or mounting upright to the sky, at his pleasure.—*New York Tribune.*

Large Cargo of Fruit.—A schooner arrived at New York from Baracoa, on Wednesday, bringing 12,298 pine-apples, nearly 12,000 plantains, 9,000 cocoanuts, about 100,000 bananas, and over 1,500 boxes of oranges.

The Woodworth Patent Outdoone.

A Great Invention.—Of all the labor-saving improvements of the day—and their names are legion—we have seen nor heard of none that in point of utility will compare with one which we had the pleasure to see in operation day before yesterday, at Townsend's furnace, where it was built. It is a machine for planing wood, invented by Mr. J. Beardsley, and patented by him.

We shall not attempt to describe the particular process by which it achieved such wonders. A satisfactory idea of the invention can only be formed by seeing it at work. Though simple in its construction, and easily comprehended at a glance, it is difficult to convey a clear understanding of the *modus operandi* on paper. It will be sufficient perhaps to say that nothing heretofore invented, approaches it, either in respect to the speed with which it does the work, or the accuracy of surface and finish it gives to every thing and anything which passes through it in the shape of a plank or board. A rough board placed within its vortex, comes out as even and polished as a mirror, to the tune of 108 feet a minute—and this, without driving the machine. Its maximum capacity is double and even treble this speed—and the greater the power and rapidity of the working, the more perfect is its execution. We can well believe that it will turn out work at the rate of 200 and even 300 feet per minute—or as fast as it can be fed.

In this respect, it outstrips the famous Woodsworth patent, and promises to supercede it entirely. The maximum capacity of that machine, we are told, is 30 to 40 feet per minute. Such as are interested in the progress of improvement will see in this something new and strange, and well worth inspection and study. The inventor may be seen at Townsend's furnace at any time, to exhibit the power of his machine to all visitors.—*Albany Argus.*

The Kerosene gas.—Mr. McAusland has been taking advantage of the temporary discontinuance of the coal gas lights and the dark nights, to make his experiments with Dr. Gesner's patent retort and apparatus, and he has undoubtedly established the superiority and purity of the gas generated. Large numbers of persons have witnessed with much satisfaction, the experiments made during the week, and our contemporaries have all borne testimony to the excellence of the light. We join in the hope expressed, that Mr. McAusland may reap the reward to which his exertions so justly entitle him.—*St. Johns N. F. Courier.*

A brace of beautiful grey cranes, of the most gigantic proportions, measuring from 6 to 7 feet from tip to tip of the wings, and a like distance from the beak to the heels, were killed on Mr. Ewart's mill-dam in Galt on Wednesday evening. They were the most perfect and beautiful of their race we have ever seen, far exceeding in size and elegance of plumage, European birds of like sort.

To Preserve Hams through Summer.—Make a number of cotton bags a little larger than your hams; after the hams are well smoked, place them in the bags; then get the very best sweet made hay, cut it with a cutting-box or knife, with your hands press it well around the ham in the bag, tie your bags with good strings, put on a card the year to show their age, and hang them up in your garret, or some dry place, and my word for it, you let them hang for five years, they will be better than on the day you put them up. I have kept them for seven years. This method costs but little, as the bag will last for years. The only loss is the hay, and that the cattle will eat if you give it to them in the winter. The sweating of the hams will be taken up by the hay, and it will also impart a very fine flavor to the meat.

To Keep Birds from Picking Fruits.—As the season is coming on for the depredations of birds I beg leave to report my experience of last year, when I saved my currants and gooseberries by winding colored worsted around and across my bushes, and my cherries by hanging up several pieces of tin with strong thread in the different trees, two pieces being hung near enough together to clash with the wind, which sounds with the bright reflection of tin in the sun, certainly frightened them away; and I had my due share of fruit, which the preceding year I was obliged to relinquish to them.—*Agricultural Gazette.*

New Cement for Earthen Ware.—Take a piece of wheaten flour dough, and knead and work it under water till the starch is all worked out and the water comes clean. The remainder is gluten. Put this into some vessel, keep it in a warm and damp place, like a cellar; and when it has undergone the putrefactive fermentation, which may be known by its becoming pasty and giving off an offensive smell, apply it to the edges of the broken articles and confine till dry. If the edges are free from grease and fresh broken, neither heat nor hot water effects it. This receipe is peddled as a secret.

To Preserve Beef Steaks.—As the warm season is fast approaching, when meat cannot be kept for more than a day or two in a fresh state, it will be of no inconsiderable benefit to many to be informed, that if fresh meat is rolled up in Indian corn meal, it will keep fresh for four or five days. The steak should be laid down in pieces from one to three pounds, and each piece covered entirely with the meal.

Calves.—Pimento (Allspice) tea has been proved a sovereign remedy for Diarrhœa in Calves. Two table-spoonsful of ground pimento put into three gill's of boiling water, is sufficient for a portion, and should be given once in 12 hours, till relieved.

Number of Sheep in the United States.—According to the last census the number of sheep in the United States amounted to 25 millions, producing 60 million lbs. of wool, which at 30 cents per lb. would give 18 millions of dollars.

The Parsonage.—We noticed with delight in Great Britain, that among the warmest devotees of Horticulture and rural taste generally, are the country Clergymen. Their homes are always pictures comfort, snugness, and beauty; and thus exercise a more powerful influence in disseminating a love of rural life among the Agricultural population than the Castles and Mansions of the great proprietors.—*Downing in Horticulturist.*

STATE OF THE CROPS.

From almost all parts we hear but one account of the crops, and that must be regarded, upon the whole as very satisfactory. The frequent thunder showers by which the present summer has been characterised, caused a rapid growth of all spring crops. Hay, however, has in consequence been somewhat injured in the making, and we hear that rust among wheat has proved injurious in some localities, although not to any great extent. The weavil in some places has committed ravages in the wheat, but that crop must be pronounced abundant in most parts of Upper Canada, and will be safely housed in the course of another week or ten days, if the weather continue fine. Potatoes, turnips and the root crops generally are making great progress; the potatoes have been looking very healthy, although we have seen in a few instances indications of decay in the centre of the tubers. The latest accounts from England are of a promising character, and a decided decline in prices has in consequence been the result.—*August 2nd.*

Some remarks on the cultivation of flax must, for want of room, stand over till our next.

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LETTERS PATENT.

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THE SUBSCRIBERS having secured to themselves the exclusive right of manufacturing and vending to others to use within the territory of Upper and Lower Canada,

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Agent at Hamilton, Mr. Raswell Wilson.

Toronto, July 15th, 1851. 42-6m

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Miner's American Bee keeper's Manual.
Alcott's Produce Tables.

A. H. ARMOUR, & Co.

Toronto, July 12, 1851. 3t

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"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR

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THE APPROACHING PROVINCIAL EXHIBITION.

Our readers are doubtless aware that the next annual Exhibition of the Agricultural Association of Upper Canada will take place at Brockville, on the 24th, 25th and 26th of September; when a large gathering is confidently anticipated. The local Committee are actively engaged in preparing the ground which is situated on an eminence, but a few minutes walk from the steam-boat landing, and commanding extensive and picturesque views of the St. Lawrence, with its numerous islands, and the surrounding country. Arrangements have been made with steam-boat proprietors on the lake and river to carry passengers at half price, (meals extra) and the same has been done with the Ogdensburgh railway, and also, we believe, with the lines that connect with it. A large number of American visitors is expected, with stock, implements, &c. and the same observation applies to Lower Canada; Brockville being very conveniently situated as regards that section of the Province. Stock, implements, &c., from the United States *for the purpose of exhibition*, will be admitted duty free, and every facility will be given for the transaction of business; of which we anticipate

a considerable amount being done. We know several parties that intend taking stock, &c., for sale, and others who contemplate purchasing; so favorable an opportunity of doing either, can only occur at the Provincial Fair. We trust to the patriotism and love of advancement among Upper Canadians to give practical proof at the approaching exposition of our skill and industry, of what our people and country are capable of producing. The good work has been earnestly and auspiciously commenced. We have had already several highly creditable exhibitions, which have attracted attention abroad, and have promoted, in many ways, improvement at home. There must now be no halting on the way;—onwards should be our motto, and the advancement of our country in those things which constitute its wealth, happiness and unfading glory, will be the certain result. The premium list embraces a wide range; comprising all the industrial arts practised among us, not overlooking even those which more exclusively belong to the higher developments of civilization; imagination, adornment and taste. We hope, therefore, to see, as heretofore, ladies and artists contributing their labors with those of farmers and mechanics in aiding the progress of a young country, pregnant with hope and promise. When it goes forth to the world that we offer in premiums no less a sum than £1,200, people at a distance will begin to think that Upper Canada, after all, must possess advantages that have been hitherto but very imperfectly understood. And so it has been, as we trust the Exhibition at Brockville will satisfactorily prove.

We have much pleasure in giving the publicity of our circulation to the following announcement, and hope that the example will not be lost sight of on future occasions. The donor, we understand, is William Matthie, Esq., of Brockville, one of the Vice Presidents of the Provincial Association.

"Private premiums will be awarded for the following productions, of the united counties of Leeds and Grenville, at the Provincial Exhibition, September, 1851; for the best sack wool of one cwt., shorn from sheep raised by owner, £3; for the best bundle flax, of one cwt., grown by the owner, £3; for the best fourteen kegs or tubs butter, of not less than 75 lbs. each, made in the same township, by seven farmers clubbing, each farmer two kegs or tubs, equal to £1 per keg or tub, £14. The above must be *bona fide* productions of the united counties of Leeds and Grenville; and the successful competitors must give, in writing under their signatures, a brief and correct statement of their respective articles:—The Sheep from which the wool is shorn; namely the breed, the age, and mode of keeping during the winter. The Flax, when sown; how much seed to the acre; quantity raised on the acre; when pulled, and the probable cost of raising an acre of flax. The Butter, the breed and number of cows milked; how kept in winter; kind of milk dishes used; how churned; how washed; what kind and quantity of salt used; how packed, and name of cooper making packages. The Judges appointed by the Exhibition Committee on such articles will decide upon the above, and the money paid upon their written decision, with the statement named being handed to

D. Wylie,
Secretary to P. A. Committee.

Brockville, July 1851."

DESTRUCTIVE EFFECTS OF FROST ON THE ROOTS OF HOPS.

We witnessed a phenomenon the other day, which no experience, even of a Canadian climate, had led us at all to expect. The destruction of wheat, and most of the cultivated plants, either of the field or the garden, by severe cold, particularly in the spring, is what we are accustomed to witness, more or less, every year. But we should have thought the hop plant, which has a number of perennial, hardy, woody roots, extending several feet below the surface of the ground, would be proof against frost, particularly where the hill was formed by earth into a small mound. We saw, however, the other day, in the County of Prince Edward, three or four gardens, in each of which several hundreds of hills were completely killed, by the severity of last winter. The destruction was precisely in those situations that had a ridge, or convex form of the surface, from which that natural, and usually efficient protector,—snow, had been driven off by the wind; a change that was followed by several days and nights of the most intense freezing. As the snow came last winter in large quantity before the ground got frozen, the sap of the hop roots, under a comparatively warm temperature, would continue more than ordinarily thin and active; and the sudden transition of temperature, occasioned by the removal of the snow, was the cause of the effects before stated.

We would strongly recommend to hop-grow-

ers, the conformation of whose plantations renders them liable to this kind of winter exposure, to spread over the surface, particularly on and around the hills, a slight covering of rough dung, or any kind of litter or straw, before winter sets in. Indeed this would be an equally good precaution for wheat, as far as it is practicable. A slight covering even, of a non-conducting substance, will frequently prove an effectual preserver of vegetable life under very rigorous skies, and by its gradual decomposition will become converted into food for the plant. The destruction of crops by "winter killing," as it is called, sometimes occurs to a very serious extent. In the county before mentioned, we saw hundreds of acres of winter wheat that had been quite destroyed, and the blanks filled up with spring crops. In the case of hops, the vacant hills had to be replanted, producing no fruit of any consequence the present year, and not a full crop even the next; the loss therefore being very great. From the peculiar character of the present summer, we should expect the hop-crop in Canada will prove short, and not of the finest quality; and the latest accounts we have received from England, represent hops as being seriously injured by the attacks of aphides, which in that country sometimes produce a total blight. Prices, therefore, will probably rule high.

THE CULTIVATION AND PREPARATION OF FLAX.

The subject of an extension of flax culture is now receiving the closest attention not only in Ireland, but in many parts of England and Scotland. It appears that the demand for linen manufactures is rapidly extending, while the supply of cotton, at least from the United States, would seem to have reached its maximum, and will probably fall, before long, very short of the actual requirements of the manufacturer. Public attention is now being turned to flax, not as a substitute, but rather as an *auxiliary*, to cotton; and should the experiments now being made in England on a rather extensive scale, in working up the flax fibre upon the ordinary machinery used for cotton, woollen or silk, prove generally reason to hope,—the most important [illegible] both to agriculture and manufactures, may be confidently anticipated.

That the soil and climate of many parts of Canada are well suited to the growth of flax admits not of a reasonable doubt; the chief impediments, that have hitherto operated in this country—and also, it would appear,—although in a less degree, in the British Islands, to an extensive cultivation of this valuable article have been the difficulty of preparing the fibre and the want of a constant market, at a remunerating price. These objections however seem likely to be speedily removed, by the adoption of improved processes and new and cheaper machinery in the preparation of the fibre; and a progressively increasing demand for its manufactured products, in various parts of the world.

We agree with a correspondent in another column, whose opinion on matters of this kind is entitled to every attention and respect, that this is a subject which legitimately falls within the province of our newly appointed Board of Agriculture; and we have no doubt but that body will give the matter early and proper attention. *The Canada Company*, with their wonted discriminating liberality, have announced two premiums for 1852, in connection with the Provincial Agricultural Association; one for *Flax* and the other for *Hemp;* and we have no doubt but the Association will second this patriotic effort. The Company's munificent prize for wheat, during the last four years, has produced already a marked improvement in this important grain; a production in which Upper Canada stands unrivalled on the American continent. May we not therefore reasonably expect that by the employment of similar means, like beneficial results may be obtained in regard to flax and hemp?

We have made these few introductory observations with a view of bringing before our readers, in this and succeeding numbers, some extended extracts from an interesting pamphlet, recently published in England, by the Chevalier Claussen, who by his mechanical ingenuity and indomitable perseverance has already introduced

what may be truly denominated, a new era in the preparation and manufacture of flax. We take for the present the section on the

OBJECTIONS TO THE GROWTH OF FLAX CONSIDERED.

It may very naturally be asked, Why, if the cultivation of flax be so advantageous, it has not been more generally carried out in this country? The answer to such an inquiry may readily be found in the difficulties which have hitherto existed with respect to its preparation, and the uncertainty of the market for the produce when so prepared. Objections, founded on the character of the crop, and the comparatively high prices of wheat secured to the grower, have also, no doubt, had some influence in preventing the cultivation of a plant which was considered to be highly exhaustive, and which had not the advantage of a protective system. With regard to the latter of these causes, recent changes in our commercial policy, of the propriety of which no opinion is here expressed, have, however, now placed the flax and the corn crops upon the same footing, and the agriculturist in this altered state of circumstances, will doubtless devote himself to the production of any article that promises an adequate return for his labour and capital. The advantages resulting from the growth of flax, as compared with other crops, will be treated of in a subsequent portion of these pages.

But a very general belief appears to prevail among our agriculturists, that flax is an exceedingly exhaustive crop. The opinion is one which has been handed down almost from time immemorial, and the clauses which in many cases are introduced into the agreements and leases for agricultural tenancies, forbidding the culture of flax, hemp, and woad, have no doubt tended to strengthen this conviction in the minds of those who have not possessed the opportunity of practically testing the truth of this very current opinion. It is most undoubtedly true that flax, in itself, like all other crops, whether cereal or others, is certainly an exhaustive one: few crops are, however, more exhausting than wheat; but the farmer does not refuse to grow it on that account, as he knows that a great proportion of the crop is usually returned to the soil. Now, there are two modes of testing the accuracy of the opinion with respect to the injurious effects of the flax crop, viz., by chemical analysis of the constituents of the plant, and by that still more satisfactory and convincing test—the result of practical experience. Tried by either or both of these, it will be found, under a judicious mode of treatment, analogous to that pursued by the grower with respect to his other crops, that flax, so far from being an injurious, will be found, independently of its other advantages, to be of greater value than any other crop in keeping the land in a profitable state of productiveness, and preventing the possibility of its deterioration.

If the construction of the plant be closely examined, it will be found that those portions of it which absorb the alkalies, and the nutritive properties of the soil, are those which are not required for the purpose of manufacture, viz., the woody part of the plant, the resinous matter, and the seed. The capsules of the seeds, the husks of the capsules, and the seeds, contain a very large proportion of nitrogen and phosphoric acid, and may consequently be advantageously employed for the purposes of manure or for the feeding of cattle. The fibre of the plant, which is that portion required for manufacture, consists of about 47 parts of carbon in 100, united to the elements of water—in fact, oxygen, hydrogen, and carbon are its principal constituent parts, and they are derived not from the soil but from the atmosphere. 100 lbs. of flax fibre has been found by recent experiments to contain not more upon an average than 2 lbs. of mineral matters, including lime, magnesia, oxide of iron, carbonic, phosphoric, and sulphuric acid, and silica.

In cases where in the course of preparation of the flax, the seed and the whole of those portions of the plant which have absorbed the nutritive matters from the soil, are destroyed by steeping, and where nothing is left to be returned to the soil, there can be no doubt that the crop is an exceedingly exhaustive one; and in the present advanced state of agriculture, it would be a vain and absurd attempt to endeavour to induce the farmer to grow flax upon such conditions. The last report of the Royal Irish Flax Society gives some particulars of the flax crops of fifty-one farmers in the county of Down, not one of whom saved the seed; and although the average gain was £7 1s. 4½d. per acre, their example is one which is not likely to be very generally followed by enlightened agriculturists.

But apart from the deductions of chemical science, or theories founded upon the structure of the plant, the recent proceedings of the Royal Agricultural Society have completely set the question at rest. Mr. Beale Brown, who has devoted the last seven years to the culture and preparation of flax in the county of Gloucester, stated at the meeting of the society on the 26th of February, that flax, deriving as it did, a large amount of its nutriment from the atmosphere, was the least exhausting crop that could be put into the ground, provided the manure from the seed and refuse were retained on the land, and only the flax fibre itself carried off; and he had reason to believe that this opinion was now entertained by all parties connected particularly with the cultivation of the flax crop.

Mr. Druce of Ensham in Oxfordshire also stated that flax was not an exhaustive crop; that he grew turnips in the same year on his flax land without manure, and that his son had found that some wheat sown after flax was one of the best crops he had ever grown. In Somersetshire it is a standing proverb that "good wheat crops always follow flax." Lord Monteagle also gave the result of his own experience, in connection with the growth of flax upon his land in Ireland, and said that some of the land which he had sown with it, had been previously rather exhausted, but by cultivating the crop well, that land had become better than any other on his estate; no meadow indeed, yielded such capital grass as that on which the flax had been grown.

The opinions of Sir Richard A. O'Donnell, one of the largest flax-growers in Ireland, and of Mr. Warnes, who has paid great attention to the subject in the county of Norfolk, were also stated in a paper read before the society by Mr. Edward M'Dermott, a copy of which will be found at page 29.

A third great obstacle which has hitherto stood in the way of an extended cultivation of flax, has been the great trouble and annoyance to which the farmer has been compelled to submit, in order to prepare his produce for the market. The Royal Irish Flax Society has laboured strenuously to encourage and promote improvements in the processes of steeping the flax. It is unnecessary here to refer to the various modes of steeping hitherto adopted, or the imperfections and difficulties which they present to the grower, as the reader will find them very clearly stated in subsequent pages.

The reluctance and growing disinclination to cultivate flax even in Ireland, which is traceable, to a cer-

tain extent, to the difficulty connected with its preparation, is most strikingly shown in the fact, that a society established in that country in 1841, for the purpose of promoting and encouraging the growth of flax, which numbers "among its members, the nobility and landed gentry on one hand, and on the other nearly all the individuals engaged in the spinning of yarn and manufacture of linen, with a considerable proportion of the wealthy English and Scotch flax spinners," which for the last three years has been backed by annual grants of the public money, and which has devoted "ten years of unremitting exertions" to the subject, has, so far from being enabled to accomplish the object for which it was formed, that it has not been able to arrest the decrease in the cultivation of flax in Ireland, from 83,000 acres in 1841, to 60,000 in 1849. This rapid decrease of flax culture has also taken place contemporaneously with an increase, unparalleled in the history of the linen manufactures, the raw materials to supply which have been obtained from the foreigner instead of the home producer.

The Royal Flax Society has done all in its power to produce a different result. Every improvement in the mode of steeping, or in the after-treatment of flax, has received some share of its attention; and directions of the simplest and plainest character have been widely distributed over the country, for the purpose of enabling the grower to avail himself of the advantages which it offered.

The society has also, with the most ready zeal, come forward upon the bare announcement of any plan, by which the grower could be relieved from this obnoxious process, and which it conceived was, therefore, calculated to mislead the public, and denounced the ignorance and folly of those who supported it. Indeed, so great has been the vigilance and care exercised by the society, that their condemnation has, in several instances, preceded investigation. At a meeting of the County of Cork Flax Association, the subject of a new mode of preparing flax, by which the grower would be spared the trouble of steeping, was referred to by one of the speakers, when Professor Murphy, who attended on the part of the parent society, said, that "the Flax Society had reported against the process, and were then going to investigate the matter." Despite all these laudable exertions, however, the cultivation of flax has greatly fallen off, and instead of that lively interest which it would have been desirable to have seen displayed on the subject by the cultivators of land in Ireland, there appeared, up to a very recent period, when the probability was announced of new markets being opened for the produce, a determination on the part of some of the principal growers, to discontinue altogether the growth of flax. This feeling of apathy on the subject is not confined to the growers of flax merely; but it is also to be regretted that, even among the supporters of a society calculated to be of such great service to the country, the same feeling very generally prevails, as is evidenced by the fact of the decrease in the amount of subscriptions and donations, during the last as compared with previous years. Although many instances might be quoted to shew, that considerable profit and advantage would result to the grower from the preparation of his flax by the ordinary mode of steeping, still the great inconvenience and trouble attendant upon the process would prevent that general cultivation of the crop which it would be desirable to witness in order to secure for our agriculturists and manufacturers that amount of independence of foreign countries for the supply of the raw material which they do not at present possess. It is vain to expect any increased cultivation of flax while such a state of things exis's as that described by M. Peyen, the celebrated French colonist, who was last year sent over by the French Government to report upon the subject of flax-cultivation in Ireland. "While personally inspecting," says that gentleman in his report to the Government, "from the 15th to the 20th of Sept., the flax fields in Ireland, I found all the inconveniences of the old system of management in a high degree of intensity, in the serious inconveniences of the watering in stagnant pools and of the spreading of the pubrid products of this most disagreeable operation, diffusing abroad insupportable exhalations." It will be shewn presently that by the use of machinery of a very simple and inexpensive character,* that the grower of flax may be spared all this inconvenience, and be enabled to send his produce to a certain and remunerative market, without the necessity of steeping it, and may also avoid those evils which, under the flax factorship system recently introduced into Ireland, have inflicted so much injury upon the flax cause, and discouraged many of the warmest of its friends in that country.

But a fourth reason, why notwithstanding the profitable nature of the crop, flax has been grown to so small an extent, is to be found in the uncertainty of the market which has hitherto existed for the article. Several striking instances are given of this in the report of the proceedings before the Royal Agricultural Society already referred to. Lord Monteagle, who attended the meeting as one of the members of a deputation from the Royal Irish Flax Society, in referring to his endeavours to cultivate flax on his home-farm as well as upon those of his tenantry in the south of Ireland, said,

"He had been induced, more to restore the growth of flax in that part of Ireland than to introduce it, as the cultivation had ceased on account of the want of markets for the produce. His tenants, too, were induced to join in the cause, as well as Lord Devon and other influential landowners of the district. They all succeeded, grew good flax, and the specimens received the favourable notice of the Flax Society, his lordship's being valued at £63 only at that time on account of the lowness of prices, but which would now fetch £100. His tenants did not, however, succeed so well as himself; they could not transport the flax in its bulk, they had no water power, and he was unwilling to erect steam-power till assured of a market; the consequence was, that he had to take all the flax off the hands of his tenants, so that at that time he had more stacks of flax than of wheat on his farm, with no means of turning them to account."

Several other growers of flax in England made similar complaints. Mr. Hammond of Norfolk, said, that not finding any market, he had thatched several of his cottages with the straw, and a more beautiful thatch he never saw. Mr. Fuller, M.P., had also grown flax in Sussex, but had "no better success in getting it off his hands; and when he offered it to a large manufacturing house, he was told they could only give him linen in return for it." At a subsequent meeting of the Agricultural Society, on the 12th of March, Mr. Fuller laid before it his balance sheet of the cultivation of flax, from which it appears that he had succeeded in selling his flax in the straw—the produce of one acre—for £3; and that his profits, upon the one acre, was £8 6s. 0d. The value of the seed alone—24 bushels, at 8s. a bushel—was £9. 12s. 0d. Mr. Shelly also stated that in Sussex it could not be turned into money; there was no difficulty in farmers growing flax, the only difficulty being to get a market for it; if it could be made a marketable article, there would be no want of growers.

*This machine may be seen at 26, Gresham-st., London.

FLAX.

To the Editor of the Canadian Agriculturist.

Sir,—

In these days of free trade progress when we encounter its operations even in the wilds of Canada, and when the palmy days of a dollar per bushel for wheat takes its place among the records of the past, it becomes needful to cast about for all fair and possible means of recovering lost ground. Various schemes suggest themselves to our consideration of which I shall only at present advert to one, that is the introduction of new agricultural products suitable to our soil and climate, and easily attainable by Canadian farmers:—

The culture of Flax forms an important item in this class. By an ingenious combination of chemical and mechanical sciences Chevalier Claussen has succeeded in converting flax into a very fair sample of cotton wool, well calculated to form an important adjunct, if not a perfect substitute for that article in various manufactures. No man will deny that flax may be readily grown, with ordinary care, upon any farm in Canada, and with average crops, it is equally certain that profitable returns will result. The introduction of this plant into our rotations, deserves our best attention and will be productive of the happiest effects. How difficult do we find it to raise turnips upon anything like an adequate scale, and who cannot testify to the loss occasioned by the absence of that precious root? In rearing and fattening live stock, a cheap and abundant supply of oil cake in combination with the offal of our flour mills, will go far indeed in supplying the blank and in improving the quality and supply of animal food and of dairy produce in our markets. It is also perfectly evident that by a free use of oil cake our farm yard manure will swell in bulk and improve in quality to an extent which it would be difficult to estimate, and which by its natural tendency to raise the amount of grain per acre, will in some measure compensate the farmer for reduced prices and enable him to meet the change of times.

My object at present being only to awaken attention, I shall refrain from entering upon details. The Canada Company with wise and patriotic energy have entered promptly and zealously into this important subject, and already premiums from that body have been announced. It is consistent with my own knowledge that every facility and encouragement will be afforded by the Directors; and there can be no doubt that a like spirit will actuate our own Board of Agriculture. It is probable that at the earliest meeting of the Board, arrangements will be made for testing in a satisfactory manner, the expense and returns of raising flax upon a portion of that land, so handsomely placed at the disposal of the Board, by the University Council, and which will be open and accessible to all the farmers of the Province to inspect.

Before concluding I may add, that a mass of useful and valuable information will be found in a small pamphlet published by Chevalier Claussen and to be procured from Messrs. Armour and Ramsay, Toronto.

I remain, Sir,
Yours, &c.,
Adam Fergusson.

MR. TYE'S REPLY AND CHALLENGE TO MR. PARSONS ON THE RELATIVE MERITS OF DURHAM AND DEVON CATTLE.

To the Editor of the Canadian Agriculturist.

Sir,

Your remarks on my query, form by no means so satisfactory an answer to it, as Mr. Parsons, in his letter in your last number, would imply. I wished to know why more premiums were allowed to Durham, than Devon and Hereford cattle; these being the breeds allowed the higher awards at the Royal Agricultural Society in England.

Surely it is not because a few individuals of high standing and influence, imported Durham cattle in the first instance, they being then considered the most fashionable breed; it is probable most of these gentlemen came from counties where Durhams are propagated, and are ignorant of the qualities of other breeds. I contend that to improve a native stock, is to introduce male animals of some similarity, altho' superior; for in no other way can the progeny be depended on. No experienced breeder would recommend more than one cross with the Durham and native, for with animals so decidedly opposite in character, nothing afterwards but a mongrel brute could be expected. I would as soon expect it might be recommended to breed from half-bred Down and Leicester sheep.

I do not conceive that Durhams being larger in quantity deserve this preference, when it is ascertained that other breeds are better adapted to the colony; and this opinion is rapidly increasing, both here and in the States. At the two shows—those of Buffalo and New York—I observed the *Devons* not only the most numerous, but fetched the higher prices. My friend,

Mr. Parsons, would have written very differently had he had as much experience in Devon as in Durham cows. That the latter may give more milk, I admit, but not in proportion to their size. As to the seven-eighth cows purchased of me, it is clear I never represented them as such; as it is certain I did not breed one of them, my own rearing are sold at very different prices. It is well known that no cows, (excepting those from the Channel Islands) produce so much cream from the same quantity of milk as Devons. It appears to me an absurdity to say that a large animal does not require longer, and richer pasture, than a small one. I am aware of the great aptitude to fatten, and the fine form of the Durham cattle; I also know, as may any one else by referring to the Smithfield reports, that the beef from them does not make so much by nearly a penny per lb., a from some smaller breeds;—there may not be that difference here—in winter, altho' there is, at the present time, one dollar a hundred;—this I will prove, if required, any day during the warm weather, either in Toronto or Hamilton. It appears that the first prize was awarded to a Devon fat ox, last Smithfield cattle show; and the Durhams were, (to use a sporting phrase,) no where.

I have no wish to detract from the favourite stock of Mr. Parsons, and many other gentlemen; that the Durhams are a beautiful race of animals, no one can deny, and useful too, when raised in a climate and on a soil adapted to them; that they do not answer for breeding in many counties in England, is also well known. Send them to Ireland and see what their offspring will be in a few years! I do not flatter myself I can convince the admirers of Durhams; particularly those brought up in counties where they are bred, that they are not *the* superior stock; such persons do not, or will not, know other breeds. This reminds me of an intimate friend of mine at a fair in Surry; for altho' there were many thousands of cattle and sheep, he could not *see* them; in fact, there were neither Durham cattle nor Leicester sheep; he in consequence sent to his brother, Mr. John Grey, of Milford Hill, Northumberland, an eminent breeder; for a drove of both Durhams and Leicesters;—one year, however, convinced him that Down sheep and hardier cattle were best suited to his location; and the reason why the latter only were shewn on sale at the fair before mentioned. If in England, Hereford and Devon cattle are considered worthy of as high premiums as Durhams, with her milder climate, richer pastures, and though last, not least, abler means; all these essentials being more necessary for the latter kind, why do the Directors of the Provincial Association, shew a preference not allowed by the Directors of the Royal Society of England?

I have answered Mr. Parsons' letter as concisely as possible, for "*Augustus*" had, in fact, sufficiently explained it away, even before it appeared. The sort of cattle named under the above signature, I think likely would please many persons in this country, more than the higher bred north Devon, being of larger size, and, without question, the best working cattle known. I would like to see a yoke of them, ploughing against a yoke of thorough-breds, either of the milking or fattening family, I don't care which!

I am, Sir,

Your obedient servant,

DAN'L TYE.

Wilmot, Aug. 7th, 1851.

To the Editor of the Canadian Agriculturist.

[The following Communication has come to hand since the foregoing was in type.]

SIR,

My letter of the 7th having been posted too late for the last number of the "Agriculturist," you will oblige me by inserting this one as an addendum and I will not trouble you, or your readers, further.

The frank and able communications from your correspondents Messrs. Farmer and Allen, must not only add to the use and interest of your publication, but also to its circulation. I should, had I not written in haste made an observation similar to the latter gentleman as to premiums for native cattle; in my opinion a most important suggestion, if it would cause farmers to take more care, and use more judgment in breeding them. I would advise the taking off some of the premiums from the ornamental Durham, and give them to the useful.

There appears to be an impression that Durham cattle mature much sooner than any other kind. I will therefore, for a small stake—say five pounds—shew four two years old heifers (calved in April 1849) against any four of a like age, Mr. Parsons can produce, the property and breed of one person—mine to be of the best quality, and the fattest. Show to come off in Galt, any day Mr. Parsons will fix previous to the State Fair at Rochester. Judges to be butchers.

I care not how the Durhams were fed in winter, if even on dollar notes, as I heard a gentleman in Toronto say was the food necessary for

them. My heifers were never housed, and had merely oat straw.

I am sir,
Your obedient servant,
DAN'L TYE.

Wilmot, August 18, 1851.

MR. SOTHAM'S CHALLENGE ON THE COMPARATIVE MERITS OF HEREFORD AND SHORT-HORN CATTLE.

Black Rock, N. Y., Aug. 21, 1851.

MR. EDITOR,

I read Mr. Parsons' letter on short-horns, and must say, I never saw so long a letter with *less proof*. I am perfectly willing to enter into a controversy with him on this subject, but I feel the public in the State of New York have been so much *cattle-puffed* by editors and breeders, that I had made up my mind to keep entirely silent on the subject, and leave the Herefords to speak for themselves; the time will come when they will bear the "palm" in America, as they did at Windsor, the last fair. I quote from the *Mark Lane Express*, of July 28th:—"As a class we give the palm to the Herefords, Lord Berwick's Hereford bull being the most perfect animal ever seen."

If you wish for a controversy on Hereford and short-horns, I am ready, and will answer Mr. Parsons' letter, as soon as you decide. In the mean time, I will say to Mr. Parsons that I will meet him, or any other breeder of short-horns and grades, with four blood Herefords and grades in any way he will point out. Early maturity, quality of beef,—the greatest weight of animal food at any age with the least weight of vegetable. The greatest weight of butter, with the least weight of food; both being kept alike, by an honest disinterested person. The best cattle for the yoke, &c. If a trial of this kind can be effected, I have no fear of the result,—all I ask is a "fair field and no favor."

I will also say more. There is one grand objection to short-horn stock in this State. Breeders purchase a bull at a high price, (or a "feigned" high price) and have his name "puffed up" to the public, as a valuable specimen, while their cows are a disgrace to short-horns or any other breed. I will write you an article on this subject as soon as I have time.

I am, &c.,
WM. H. SOTHAM.

[We shall be happy to be put in possession of Mr. Sotham's views and defence of Hereford cattle as adapted to this continent, &c.; and from what we know of his experience in breeding this description of stock, and the very favorable specimens we remember seeing on his farm last summer, we have no doubt of his ability to throw considerable light on the subject. We request our readers to weigh impartially the arguments and evidence on both sides, and then judge for themselves.]—EDITOR.

NEW YORK STATE FAIR.

This important agriculturing gathering, by far the most numerous of any that takes place on this continent, or, perhaps, in any other part of the civilized world, will this year be held at Rochester, on September 16th, 17th, 18th & 19th; and from all we can learn it bids fair to exceed most, if not any of its predecessors. The locality being so convenient for persons to attend from Upper Canada, we have no doubt but large numbers of our fellow countrymen will pay our New York neighbors a visit on the approaching occasion. Steamboats and railways will take visitors to, and from the fair, at half the usual rates. We insert below, for the information of our readers, the circular of Mr. Fogg, the local Secretary;—also the correspondence between the Secretary of the Agricultural Association of Upper Canada, and the President of the New York State Agricultural Society. The latter affords a pleasing evidence how neighboring nations, living under different forms of government, yet inheriting a common ancestry and language, may evince a spirit of mutual respect and good will, in the promotion of a pursuit, which constitutes the basis of a people's wealth and independence,—the ancient and noble art of tilling the soil.

"The undersigned has been appointed local Secretary to the New York State Fair, and any enquiries respecting the arrangements of the show-grounds may be addressed to him. Persons having articles for exhibition, who cannot accompany them to Rochester, may consign them to him, and rely upon their being properly taken care of, and the necessary entries made at the business office.

"The Collector of the Customs at the Port of Rochester has received instructions from the Department at Washington, whereby all articles and animals, intended for the Fair, will be admitted *free of duty*, to be entered according to the provisions of the warehousing act; and the Fair grounds at Rochester are to be deemed constructively, warehouses, where all articles and animals from Canada, duly entered, will be under the supervision and custody of the officers of the customs."

JAMES P. FOGG,
Local Secretary.

Rochester, N. Y., Aug. 1851.

Toronto, Canada West,
June 24th, 1851.

DEAR SIR,

I am instructed by the Directors of the Agricultural Association of Upper Canada, to inform you that they have resolved on the postponement of their Annual Exhibition to the 24th, 25th and 26th of September, in consequence of having learned that the New York State Fair was appointed to be held in Rochester, during the previous week, that being the time appointed for our own, as determined at the annual meeting at Niagara. Our exhibitions for the last three years have been held at the same period of the month. When we ascertained that your time was finally determined, and as many of our people would feel anxious to visit your fair, (a feeling which we have the pleasure to think is reciprocal,) our directors resolved on making the before-mentioned change. In future it is hoped that this difficulty will be obviated.

I am directed to state further, that we hope to have the honor of the presence of as many of your officers as can make it convenient to meet us at Brockville; and we should be additionally obliged if they would consent to act as judges.

Hoping this request will receive a favourable consideration,

I remain, dear sir,
Very truly yours,
GEO. BUCKLAND, *Sec'y.*

B. P. JOHNSON, Esq.,
Sec'y State Agr'l Soc'y, &c. &c.

Oaklands, near Geneva, July 10, 1851.

DEAR SIR,

I have received from our acting Secretary in Albany your letter of the 24th ult., announcing the postponement of the Annual Exhibition of your Association, upon learning that the Fair and Cattle Show of the New York State Agricultural Society was to be held in Rochester at the time originally appointed for your own.

This act of courtesy is highly appreciated by the New York State Agricultural Society, and as the high aim of our respective Institutions is the prosperity and advancement of the farming interests, which include probably more than three-fourths of the entire population, I cannot doubt such acts will have a wide-spread happy influence; and I trust no occasion will be omitted on our part to reciprocate like attentions. We hope to see the President and as many members of your association with yourself, at our approaching Fair, (where you will find a cordial welcome) as can conveniently attend,—we shall be happy to extend every facility to your agriculturists and others who may be disposed to exhibit their cattle and other stock, as well as all objects of skill and ingenuity. To facilitate this desirable interchange, the Government of the United States has issued instructions to the officers of the Customs at Rochester and Lewiston, to permit the entry of articles from foreign places free of duty, under the warehousing act; and have authorised the Fair grounds of the Society to be constructively a warehouse for the reception of such articles.

It will be very gratifying to members of the New York State Agricultural Society to attend your exhibition, and action will doubtless be had in relation to a delegation for that purpose at the next meeting of the Executive Board.

Respectfully and truly yours,
J. DELAFIELD,
President N. Y. S. Agr'l Soc'ty.

REPAIRS AND WHITE-WASHING OF OUT-BUILDINGS.—Submit every out-building on your place to a searching examination—repair one which needs it. This done—make yourself a whitewash after this fashon:—dissolve two pounds of potash in five gallons of water, then add two lbs. of wheat flour, make the whole into a paste by stirring in the flour a litte at a time—then in another tub slack as much lime as you desire to use, and when cold incorporate it with the first, and apply it to all parts of your buuildings, both inside and out—roofs and all, and you will not only have put on a beautiful and durable whitewash, but one which will render your wood-work as nearly incombustible as is desirable.—*American Farmer.*

Experiments show apples to be equal to potatoes to improve hogs, and decidedly preferable for feeding cattle.

Timber cut in the spring and exposed to the weather with the bark on, decays much sooner than if cut in the fall.

To cure scratches on a horse, wash the legs with warm soapsuds, and then with beef brine. Two applications will cure in the worst case.

ANNUAL EXHIBITION OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

—

The great Annual Meeting of this National Society was held in the Home Park, at Windsor, on the 15th, 16th, and 17th July, and from all that we learn, it was one of the most successful exhibitions the society has ever held. At this meeting only live stock was exhibited; those very numerous and attractive departments,—agricultural implements and productions,—formed part of the World's Industrial Exhibition, in Hyde-Park. Notwithstanding the Society's Exhibition was thus shorn of half its usual attractions, the number of visitors was very great, and the cattle, horses, sheep, and pigs were far more numerous, and in some respects of superior quality, than on any previous occasion. The location was not only favourable as affording great facility of access by railway, but its contiguity to the Royal Castle, so celebrated as the chief residence of a long line of British Sovereigns, afforded an additional inducement for persons of all classes and countries to visit the show. The Queen, accompanied only by Prince Albert, inspected every department of the Exhibition, and like a farmer's good-wife (for the Prince is an extensive and skilful practical agriculturist,) examined with much interest many matters of detail. How full of hope and encouragement is such an example. The monarch of the richest and most extensive empire on earth, recognizing in the most practical and popular manner, the strong and legitimate claims to Royal consideration of the ancient and noble art of Agriculture;—and that Monarch, too, a woman! As a colonial member of the vast dominions of such a sovereign, we feel a becoming pride in recording this fact. Long live our gracious Queen! Peace and stability to her Empire; and prosperity to all classes of her people!

The society have this year much increased their classes; among the novelties, we observe the admission of several breeds of cattle hitherto not recognized,—such as the Sussex, long-horns, Alderney, horned and polled Scotch, the Welsh and Irish, all properly classified. Thus a full outline was presented to the foreigner, of the various breeds connected with the different agricultural systems in the United Kingdom. The total number of animals exhibited was 1,267. The short-horns, as usual, were far the most numerous, and included many animals of the highest degree of merit. Lord Hastings' bull, which received the 2nd prize, is said to be a remarkably large animal, 9 feet 2 inches in girth, 5 feet 9 inches long from shoulder to tail, and 5 feet 6 inches high. Lord Berwick's Hereford bull was nearly of equal dimensions, and of very fine quality.—The Herefords were generally less than the Durhams of equal age. The North Devon were numerous and remarkable more for elegance of form than for size. Considering the limited area over which this breed extends, their numbers were larger than any other, and elicited much admiration. In horses, sheep and swine, the show was particularly rich: but we have no space for details. We hope to hear the opinions of several of our Canadian visitors to England, at the approaching Exhibition at Brockville. The following table will give the reader an exact idea of the comparative numbers of the different breeds of cattle at the Windsor Meeting:—

	Bulls.	*Cows.*	*1 Yr. Old Heifers.*	*Yearling Heifers.*
Short-horns	89	25	22	40
Herefords.....	19	6	7	9
Devons	21	15	17	21
Long-horns	2	2	1	2
Channel Islands ..	12	8	6	5
Sussex	9	6	3	4
Scotch, horned ..	3	4	2	0
do polled ...	2	3	2	3
Welsh, Irish, &c.	6	4	3	2

The Dinner, on Thursday, was attended by about 2,000 persons, including a number of distingushed foreigners. We subjoin a condensed account of the festive proceedings from an English paper:—

The show of the Royal Agricultural Society has finished with equal *eclat* to its commencement, and in all respects has been most successful throughout its proceedings. On Wednesday, the day of the customary dinner, the "yard" is reported to have been inconveniently crowded. At the dinner, the Duke of Richmond, as President, proposed the loyal toasts. Prince Albert replied for himself and the Queen, expressing heartfelt pleasure in welcoming them to the Home Park. He then drew a historical contrast:—

"Your encampment singularly contrasts with that which the barons of England, the feudal lords of the land, with their retainers, erected round old Windsor Castle, on a similar mead, though not exactly in the same locality. They came clad in steel, with lance and war-horse. Your appearance, in a more peaceful attire, and the animals you bring with you to the meeting, are tokens of your successful cultivation of the arts of peace. (Vehement cheering.) King John came trembling among his subjects, unwillingly compelled to sign that great charter which has ever since been your birthright. (Cheers.) Your Sovereign came confiding, among her loyal and loving people—she came to admire the results of their industry, and to encourage them to persevere in their exertions; and the gratification which the Queen has felt at the sight of your splendid collection must, I am sure, be participated in by all who examine it. (Great cheering.) I am doubly pleased at this success, not only because it is witnessed by the many visitors from foreign lands now within our shores, whom every Engilshman must wish to inspire with respect for the state of British agriculture, but also because I feel to a certain degree personally responsible for having deprived you of one—generally most interesting—feature of your show—I mean the field fruits and the agricultural machines and implements." (Cheers.)

In the course of the other speeches, M. Van de Weyer, the Belgian Minister, made a lively speech on English and Flemish agriculture. He said that in many diplomatic despatches, "dissertations on breeds of cattle and manuring take the place of the idle and dangerous political gossip of former times." The Duke of Richmond, in acknowledging his own health, said that "at no show in the world had so many good animals ever before been congregated." Lord Ashburton made the

most singular speech of the evening. The toast he had to propose was "The agricultural labourers." He showed the state of dependent relations of class with class, and pointed out the peculiarities of the labourer's position :—

"And yet there are those who think lightly of the labourer—who call him rude and boorish—who make his ignorance a bye-word. They say he is uneducated, because he knows little of things that do not concern his own calling; but above all, because he is taught to do, and he is not taught to talk—because in this land, where we choose members of Parliament by their talk, and Cabinet Ministers by their talk—a false test of ability, a false test of knowledge, a false test of education has been set up, and by this false test the labourer has been judged. (Loud cheering.) But it is not by this test, it is by his works that you shall know him. Try him by what he does, not by what he says. (Loud cheering.) Try him by what he knows of his own business, not by what he knows of his neighbour's.—Put a plough into his hands, and although he cannot define a straight line like others taught by rule in set forms of speech, he will run a furrow mathematically exact between its extreme points, though they be as distant as the eye can reach. (Loud cheers.) Is there no education there? What say you of the training of that eye, of that hand, of that head, which can not only see the line, but follow it so truly, making an unerring instrument out of two rude horses and a plough. (Loud cheers.) Or do you hold that only to be education which is to be gained in books; that only to be knowledge which is the development of abstract rules and general ideas? (Cheers.) Take another case. Give one of these ignorant peasants a quarter of corn, bid him sow it over six, or eight, or ten acres; he will not sit down to pen and ink, and consult books. If he lost hours at that work, the world would forthwith dub him a scholar, and doff its hat to him; but he goes straight to the field, and distributes the grain so exactly over the space assigned, that the harvest you shall see no spot unoccuped—no spot more crowded with plants than another. (Cheers.) Is there no education in this? Is there no education required to give so exact an appreciation of quantity—so intimate a knowledge of the capacity of a given space? (Loud cheers.) Propound the same problem to a philosopher. (A laugh.) I believe the labourer would sow a whole farm before the other could make out his rule; and when he had this rule, I doubt if he could ever teach a scholar to apply it. (Loud cheers.) But this is not all; I have as yet spoken only of the mechanical skill of the labourer. I come now to that knowledge which he possesses in common with yourselves — the knowledge of the art of farming—an art which has ever formed the delight of the noblest and most elevated characters of all times—an art which exacts from those who practise it the power of dealing with the incidents, occasions, and emergencies, as presented by the varieties of the seasons, by the nature and constitution of domestic animals, by the nature and properties of plants—an art which elevates and dignifies the mind by the perpetual study and constant contemplation of God's most interesting works; and yet the labourer, so gifted, so trained, is held to be a boor because he cannot talk. (Loud cheers.) But you are not led away by this sophism. Whatever you may do on the hustings—whatever you may approve in Parliament, you have never chosen your shepherd for his talk. You judge the agricultural labourer by what he can do; you love him for his honest worth; you reverence him for his wondrous sagacity, for the genius of his instincts; and now when we are met together at this high festival, with the magnates of the land, with the distinguished in arts and literature of the civilized world: now we have expressed our loyalty to the throne—(cheers)—our respect for the illustrious Prince, our patron, and the patron of all that elevates society—(loud cheers)—now that we have expressed our gratitude to our distinguished guests for their presence—(cheers)—to our especial leaders and benefactors for their services—we find no toast so satisfactory to our judgment, so grateful to our feelings, as the toast of 'The Labourer,'—even though he cannot talk.—(Great cheering.)"

One or two other speeches finished the proceedings; Mr. Evlyn Denison eliciting a hurricane of cheers by incidentally mentioning the name of "Stanley" in connexion with the impetus given to the use of guano, by Lord Stanley's Liverpool speech, some years ago. The president elect, Lord Ducie, was unable to attend from illness.

We learn from official sources that the number of visitors to the show-yard on Tuesday was 3,000, who paid 5s. each for admission; on Wednesday, when the charge was lowered to 2s. 6d., the visitors amounted to 14,500; and on Thursday, the last day of the show, when the price of admission was reduced to 1s., the numbers were 18,000. Altogether the numbers, though not equalling some former years, produced an unequalled revenue, in consequence of the increase of price.

The proceedings finished on Friday by a dinner to 1,800 labourers of the neighbourhood, invited by ticket through the ministers of every denomination:

"The guests consisted of persons of all ages and of both sexes—all of them clean and neat in their appearance, every face beaming with happiness and radiant with smiles. They were of a class above the very lowest grade of labour, as was evidenced by their being almost all in holiday attire; the women were dressed in plain but clean cotton gowns, and there was scarcely a smock-frock to be seen amongst the men.—Their behaviour throughout was, upon the whole, most orderly; their patience was a little tried at the outset by being kept waiting for the arrival of some of the more distinguished guests—they bore it well; and their hilarity though loudly expressed never surpassed the bounds of decency and order; so it was during the time that the few speeches were delivered. As may be supposed, of the two duties of an audience, the cheering was much better performed than the listening; but there was no speaker with a voice loud enough to be heard all over the great hall, who was not sure of being listened to; and even with regard to the feeblest, it may be stated that the conduct of the audience would form a favourable comparison with that of their employers—the tenant-farmers, on the previous Wednesday. Add to this, that though the ale circulated freely on the occasion, yet, when the proceedings were over, no one seemed inebriated—no one showed a disposition to protract his stay at the dinner-table, but all retired at once, hilariously but orderly, to the show-yard adjoining, where the younger portion of the guests amused themselves with various sports on the greensward; after which tea was served to those who wished it, and the festivities were quietly brought to an end.

"The expense of providing hired waiters for the dinner would have added considerably to the expense of the arrangements. This was obviated in a great measure, by putting down on the tables at once all the provisions, consisting of cold beef, mutton, lamb, plumb pudding, &c., and leaving the guests to help themselves. Still some superintendence was necessary, and this duty was undertaken by the Clergy, and several respectable

inhabitants of Windsor, so that it was no uncommon sight to see a Canon of Windsor or a Master of Eton College, as well as several of the parochial clergymen, moving about from table to table, assisting the guests according to their wants, and occasionally handing to them a flagon of ale or a basket of bread. It was, in fact, an entire commingling of all classes, and the kindly feelings evoked on this occasion cannot fail to exercise a deep and lasting influence on the labouring poor of Windsor and the neighbourhood towards their superiors.

THE HAPPY FARMER.

Saw ye the farmer at his plough
As you were riding by ?
Or wearied 'neath his noon-day toil,
When summer suns were high ?
And thought you that his lot was hard ?
And did you thank your God,
That you and yours were not condemn'd
Thus like a slave to plod ?

Come see him at his harvest home,
When garden, field and tree,
Conspire, with flowing stores to fill
His barn, and granary,
His healthful children gaily sport,
Amid the new mown hay,
Or proudly aid with vigorous arm,
His task as best they may

The dog partakes his master's joy,
And guards the loaded wain,
The feathery people clap their wings,
And lead their youngling train,
Perchance, the hoary grandsire's eye
The glowing scene surveys,
And breathes a blessing on his race
Or guides their evening praise.

The Harvest-Giver is their friend,
The Maker of the soil,
And Earth, their Mother gives them bread
And cheers their patient toil.
Come join them round their wintry hearth,
Their heartfelt pleasure see,
And you can better judge how blest
The farmer's life may be.

DISPOSITION OF CATTLE TO FATTEN.

Many people act on the supposition that all cattle are alike in their disposition to fatten ; no greater mistake can be committed, since half the feed will bring forward one animal, required to produce another, and the economy of fattening cattle depends in no small degree in selecting the right animals. Mr. Stephens gives some rules for selecting animals disposed to early maturity. He says:

The most prominent indication of this disposition is a loose, thick, mellow skin, as if floating upon a stratum of fat below ; and such a skin is invariably covered with, long, soft, mossy feeling hair, bearing a decided colour. A firmness of texture over the whole body is essential to a disposition to fatten ; no fat encumbers the bones of the legs and of the head, all the extremities—the limbs, head and tail are small, fine and tapering from the body. The eye is prominently set in the head, and with a placid expression. The forehead is broad. The ears are sensible to every new sound. The muzzle is sharp, the nostrils distendd, and the jaws distinct and clean. The muscles broad and flat. The blood-vessels large and full. The chest is broad, and the tail flat at the top, and broad and tapering to the tuft of hair. The line of the back is straight and level, and the ribs round. A back high above the level is narrow, and is accompanied with flat ribs and a long, narrow face, which are both indicative of a want of disposition to fatten. When the back is below the level, the fat and flesh are mostly upon the lower part of the carcass, and the tallow increases in the interior. The flanks and cod are then thick and fat. In such a configuration, the fore-quarters are larger than the hind. Such an animal evinces a disposition to fatten but lays on coarse pieces. When the curved lines abound over the body and play into one another, giving a brilliancy to the surface, while the sweeping lines of the contour, with the tapering fineness of the extremties, the pleasing countenance, and the joyous spirit, a symmetry, state of health, and disposition to improve are conjoined, they afford the highest satisfaction and profit to the breeder.

MACHINE FOR GATHERING CLOVER-SEED.—Mr. George A. Smith, of Winchester, Randolph County, Indiana, has invented and taken measures to secure a patent for a machine for cutting and gathering clover-seed. This machine exhibits a great deal of ingenuity, although its construction is very simple. A wooden roller is constructed with thick, spiral-shaped projections, at a short distance apart, running on it lengthwise with the axis. On these spiral projections are secured knives or blades set in such a way that the cutting edge of each projects over the concave part of the wooden spiral of the cylinder. A rake is placed on the carriage below, like that of a grain reaper, and a straight knife extends across the rake behind, to hold up the clover, so that as the spiral cylinder revolves, the knives of it cut off the heads of the clover, and the receptacles under the knives carry the heads of the clover round, and thus deposit the seed in a proper receptacle at the turning vertical point. There is also an arrangement for securing the wheels on the axle of the carriage, which is a very good improvement. The collars of the wheel-boxes have ratchet teeth, whereby the axle is made to turn when moving forward, but not when moving back, thus throwing the wheels out of gear with the cutters, by a spring, when necessary.—The rake can also be adjusted to any required distance to or from the revolving cutters.—*Scientific American.*

MEDITERRANEAN WHEAT.—The damage done to the wheat crop this season, by the weevil, has excited a good deal of apprehension in the minds of our farmers for the future, and attention has been turned to securing some earlier variety which shall ripen sufficiently early to escape the ravages of this insect, which in so many parts of the country has completely destroyed the wheat crop. The Hallowell Agricultural Society held two meetings on the subject, and finally concluded to purchase some Mediterranean wheat for seed for the use of its members. This wheat has been tested two years in some parts of the adjacent County, and has escaped the ravages of the weevil in localities where the Soules, Rasp, and Flint wheat have been seriously injured.—The Mediteranean is not so fine a variety of wheat as some others, but is very hardy, standing the winter well, and very productive. The person from whom the Society purchased their seed raised 300 bushels from seven acres. It weighed 61lbs to the bushel.—*Picton Gazette.*

Never keep your cattle short; few farmers can afford it. If you starve them, they will starve you.

Horse-Power Ditching Machine.—Mr. Charles Bishop, of Norwalk, Ohio, has invented and taken measures to secure a patent for a good improvement in Ditching Machines, whereby the old spade method of ditching by manual power is entirely thrown into the shade. His machine is worked by horse-power, and is provided with a revolving excavator, the shaft or axle of which, lies in the direction of the length of the ditch. The excavator is of a screw form, and is operated by an endless chain. The ditch is cut of a semi-circular form, and it deposits the cut clay of other kind of excavated earth in a box, from whence it is delivered at one side of the road, by scrapers attached to the endless chain, the machine being propelled forward by a friction wheel or roller, moving in the ditch and operated by the excavator shaft.—*Scientific American.*

ON THE CULTIVATION OF HEMP.

Hemp requires for its growth a soil of deep rich, moist alluvium, such as is found in the best parts of Lincolshire, where the ingredients of the earth are numerous, finely comminuted, and very intimately mixed. It will thrive on friable loams, and on loamy sands, provided the culture be rich, and the manuring abundant. On the latter soils the produce is not so abundant as black rich moulds, but the quality is finer, and can be used for more valuable purposes. The land must be very perfectly cleaned and heavily manured, or made very rich by the previous cropping. If freshly manured, the quantity may be 16 to 20 loads of dung on an acre. On this rich and pulverised surface, two bushels of Hemp seed are sown by the hand in broadcast, during the two first weeks of the month of April, and covered by a light and gentle harrowing. The heaviest and brightest colored seed should be selected, and some of them should be cracked to see if they have the germ perfect. Birds must be scared from the sown ground till the plants appear. It has been practised to hoe the crop, setting the plants at 12 to 16 inches apart, cutting down all weeds, and repeating the hoeing at the distance of a month or six weeks; but when the culture of the land is proper, the plants very soon cover the ground and kill every weed.

In about four months after sowing, the plants of Hemp turn yellow in the leaves, and the stalks become white, when the crop is ready to be pulled. When thread only is intended, without any regard to seed, the whole produce is pulled at once; when ripened seed is grown, the male plants are first pulled, usually in August, and the female ones afterwards, in the beginning of October, when the seeds are seen to be ripe. In both ways the stems are tied in bundles of about a yard in diameter, and with a rope at each end. The crop is then conveyed to the steep of water, in order to undergo the operation of water-retting. The bundles are placed in rows crossing each other, and are kept under water by blocks and logs of wood. It soaks generally from four to ten days, if the weather be warm; if not, five or six more, till the outside easily rubs off. It is then spread out singly on the grass, and turned, if there be showers, thrice a week; if not, twice a week. This is called grassing, and requires five or six weeks. It is then tied up in large bundles, and carted to a barn or house for breaking, by a machine called a "brake;" this is either done directly, or the bundles are laid up to dry for the future purpose. The Hemp being beat and broken by the hand or mill, is dressed or combed, by being drawn through hickles or heckles, resembling wool-combers' tools, only fixed. The Hemp that is broken off by the operation is called "shorts;" this is bound up by itself, and is about the value of the long Hemp. The offal is called Hemp sheaves, and makes good fuel. Sometimes the Hemp is dressed to one quality of fineness, or it is made into two or three sorts, as the demand of purchase may direct. The heckler sells the Hemp to be spun for thread, or himself applies it to that purpose. Being converted into yarn, it is sent to the "whitester," who returns it in a bleached condition.

The female plants of Hemp produce the ripened seeds, and for that purpose remain longer on the ground. The pulled bundles of tied stems are staked up or housed till the seed be threshed out. In the spring (January or February) the stems are spread upon grass, and if the season suits, particularly if covered with snow, it will soon come a good colour, and make a strong coarse cloth; but it is much inferior to Hemp pulled in proper time, and water-retted or steeped. Although Hemp, in the process of manufacturing, passes through the hand of the breaker, heckler, spinner, whitester, weaver, and bleacher, yet many of these operations are frequently carried on by the same person. Some weavers bleach their own yarn and cloth; others their cloth only. Some heckle their tow and put it out to spinning; others buy the tow and put it out; and some carry on the whole of the trade themselves. When the trade is conducted by different persons, their interests often clash. By under-retting the Hemp, the grower increase the weight; by slightly beating it, the heckler increases the quantity of tow, but leaves it fuller of bark; by drawing out the thread beyond the staple, the spinner increases the quantity of yarn, but injures the quality; by forcing the bleaching, the whitester increases his profit, but diminish the strength of the yarn. In general, in manufacturing cloth, strength is sacrificed to fineness and colour.

The average produce of an acre of Hemp may be estimated at 40 stones, or £16 in money. The expense per acre may be about £10, leaving £6 for profit, along with seed (£4).—J. D.

DRAINING BY MACHINERY.

A series of interesting experiments have been lately made at the farm of Mr. Ruck, Down Ampney, Gloucestershire, for the purpose of proving the superior advantages of draining land by machinery, both in time, and expense, as compared with manual labour. The machine is an invention of Mr. Fowler, of the firm of Fowler and Fry, of Bristol. The field selected for the experiments consisted of stiff clay land, exceedingly dry on the surface, and crossed by a gravel path. The machine is formed by two horizontal iron frames, nine feet long, placed two feet apart, supported at one end by three wooden rollers, of one foot diameter, turning on axles; at the other end by two cart wheels. At the end nearest the cart wheels, and between the two frames, is supported a perpendicular plough or coulter of iron, seven feet in height, nine inches broad, and three quarters of an inch thick; the side of this plough or coulter, intended to cut the drain, has a sharpened edge, the other side is formed into a rack, which can be raised or depressed at pleasure, by a pinion or wynch, working into it, so that the plough is capable of being placed in the ground at any required depth. At the bottom of this upright plough or coulter is a socket, in which is placed a lengthened horizontal cone or plug, the

point or apex in the same direction as the sharp edge of the coulter; at the back of this plug is fixed a rope, upon which is strung as many drain pipes as its length will allow; a simple proces is adopted to add fresh coils of rope, as more pipes are required. A hole is then dug in the ground, say two feet deep, and a foot wide, as in the present experiment, gradually sloped at the back, so as to allow the rope with the pipes to enter freely, and the coulter is placed upright in the hole, with its sharp edge and the point of the plug in the direction the drain is to be formed; at the end of the horizontal iron framing, farthest from the coulter, is fixed a horizontal pulley, through which a wire rope is passed, fastened at the other end to a capstan placed at the opposite extremity of the field, up to which the drain is to be formed. Four horses were harnessed to the capstan, which they turned with very trifling exertion, thus drawing the coulter through the land, the plug forming the drain and the rope with the pipes following. The time occupied in laying the nine chains of piping was thirty-three minutes, and the surface land was not more disturbed than if a knife had been drawn through it; when the coulter was drawn up to the capstan it was raised out of the ground, the rope disengaged from the plug, and the horses hitched to the other ends of the coils of ropes, which they immediately drew out, leaving the tiles accurately placed, as was ascertained by digging down to the drain. Another drain was then immediately formed in the same manner, at a parallel distance of about fifteen feet, the capstan in the same position. The estimated expense of draining land in this manner, independent of the cost of the tiles, is about 4d. a chain. From 6000 to 7000 feet can be drained in one day, at an expense of about 30s.—*Architect.*

PROFESSOR JOHNSTON'S NEW WORK ON AMERICA. *

Many of our readers will recollect that Professor Johnston spent about eight months on this continent two years since; a large portion of his time was devoted to the making of an Agricultural Survey of New Brunswick. He visited and lectured in several of the States; his eloquent and comprehensive address delivered before the New York State Agricultural Society at Syracuse must be fresh in the recollection of many. He also paid a short vist to Upper Canada and attended the Provincial Exhibition held at Kingston in September, 1849. In the work before us we have an interesting account of his journeyings and impressions relative to the Agricultural, Economical, and Social condition of such portions of the American Union which he visited, together with the British Possessions north of the American boundary. We have had time only to glance at the contents of these two volumes, which, however, we do not hesitate to pronounce, from what little we have seen and the well known reputation of the author, are well deserving a careful perusal of all who feel an interest in the general condition and advancement of either British America or the United States. We intend to give our readers occasional extracts from this work, commencing with the author's visit to Upper Canada, at the Provincial Agricultural Show in Kingston.

"At 6 P. M. we landed on the pier. I almost felt myself at home again as I set my foot on shore in sight of the British flag; and the kind welcome of a Kingston family added double pleasure to the agreeable week I subsequently spent in this place.

In manners and in sympathies, a sensible difference still prevails between Upper Canada and western New York. Notwithstanding the proximity of the two countries, and the increasing intercourse between them, this will probably long continue to be the case.

Part of the difference which is felt in crossing from either side, may be in idea only, and connected with one's political prejudices, republican or monarchical; yet sensible differences, both in men and women, exist nevertheless. One feels the—*de trop*—the tendendency to exaggerate—among the men on the one side, obtruding itself sometimes offensively, especially in the newer States of the Union, and among the newer people. An opposite tendency, and not unfrequently symptoms of discontent lurking at the corners of the mouth are met with along the Canadian border, so often as to arrest attention to the circumstance. But the Upper Canadians have in themselves, and in their country, the materials of a first rate people, if their eager spirit, anxious too speedily to excel, would permit them to proceed steadily on their way.

The Upper Canadian women have their character too. "I'll go over to Canada for a wife when I marry," said a young south shore farmer to his friend. "When I come home at night she'll have a nice blazing fire on, and a clean kitchen, and a comfortable supper for me; but if I marry a New Yorker, it'll be, when I come home, "John, go down to the well for some water, to make the tea;" or "John, go and bring some logs to put on the fire, to boil the kettle." No, no; a Canadian woman's the wife for me."

* "Notes on North America, Agricultural, Economical, and Social; by James F. W. Johnston, M. A., F. R. S. S. L. and E., F. G. S., &c., Reader in Chemistry and Mineralogy in the University of Durham; 2 vols. 8vo; Boston, Little and Brown; Edinburgh and London, Blackwood and Sons, 1851." The work may be procured in Toronto, of A. H. Armour & Co., King Street, and we presume of the Booksellers generally.

One circumstance which will materially modify the population on the opposite shores is the large number of Germans who have settled in the States, while the population of Upper Canada is almost wholly British. This, I think, promises a more active future to Canada than the population of New York would give her.

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In Canada, every one is satisfied of the paramount importance of the agricultural interest; a very general desire exists, therefore to advance it by every reasonable or available means. The superior class of settlers of whom so many are scattered over Upper Canada, will greatly facilitate the adoption of such means of improvement as are usually employed, or are easily available by agricultural societies.

The Agricultural Society of Upper Canada had been in existence only three years, and the excited state of political parties had retarded that general union, even upon the question of rural improvement, which as men's minds sober down, must eventually take place. Still I was agreeably surprised, both at the extent of the preparations I saw making on my arrival, and with the appearance of the town and of the show-yard on the day of the exhibition. The latter was not so extensive nor so crowded as that of Syracuse, but much more numerously attended by well dressed and well behaved people, and rendered attractive by a greater quantity of excellent stock and implements than I had at all anticipated. The best of the stock was brought from the western part of the Province. Among them were superior Short-horns, a few Devons, and some Ayrshires—all of pure blood. The greater number, however, were crosses, which, as in the States, are here called *grades*. The Leicester sheep were very fine, and the prize pigs—chiefly Berkshires—excellent.

The pig husbandry in Canada and in the Province of New Brunswick, to be conducted economically, requires to be somewhat modified in comparison with the method adopted in Ohio and the other large hog-growing and Indian corn-producing States.

Of the vast number slaughtered at Cincinnati after harvest, the ages vary from a minimum of eleven to a maximum of nineteen months. They are generally kept over one winter and *packed* before the next commences In the Provinces the first difficulty which the settler has to overcome is that of laying in a sufficient stock of food for the long months of winter; and although the introduction of a better husbandry will by-and-by greatly lessen this difficulty, yet at present it is a main object with the farmer to get the winter over at as little cost of food as possible. The aim in regard to pigs is therefore to obtain a breed which shall litter in April, and can be fed to produce a barrel of pork (196 lbs.) in November or December of the same year, and thus to save all winter keep, except for the breeders. As the lumber trade retires farther back, and becomes less extensive, the large and fat pork which was in demand for the lumberers becomes unsaleable and a new form of the article—such as a civilized community are likely permanently to consume—is necessary to be produced.

Considerations of this kind render it necessary to look at stock in different countries with a differently instructed eye; and the opinions of a committee in offering, and of a judge in awarding prizes, must be determined, not so much by the abstract excellence of this or that animal or breed, as by its special adaptation to local circumstances, and to the purposes for which it is reared.

Among the implements, which considerably exceeded in number and variety what is often to be seen at the shows of the Highland and Agricultural Society of Scotland, there were many excellent ploughs, harrows, cultivators, &c., manufactured in the Province. Straw and corn-stalk cutters, and corn-shellers, were in considerable numbers; but an English visitor would be struck by the want of drill-machines, and root cutters, and grain-crushers, now so abundant at our British shows. A few of the former for drilling wheat, were the only implements of this kind which were to be seen. The roots exhibited—turnips, carrots, beet, mangold wurzel, &c.,—were all large and fine, showing the aptitude of the climate and soil to this culture. But here, as elsewhere, in North America, the root-culture is still in its infancy. A rich virgin soil, producing crops for many years almost spontaneously, gave no stimulus to the preparation and preservation of manure among the first settlers; while the ready sale for wheat, and the difficulty of procuring hay for large winter stock, have hitherto prevented the attention of the existing farmers from being turned to the rearing of cattle.

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On the whole, as I have said, this Kingston show was very creditable to the Province of Upper Canada. The thousands of people who came to it, the stock and implements exhibited, the respectable appearance, the orderly behaviour, the comfortable looks and cheerful faces of both male and female, spoke for a state of things at least not very unflourishing. The British blood is purer in Upper Canada than in the State of New York, where, as I have already

remarked, Dutch and German settlers occupy large portions of the territory, and crowd into the towns; but in both there is enough of its influence and energy seen everywhere to make a home-born man proud of his country and his people. Faces, persons, dispositions—all look like home over again. The most pushing and impatient of the colonial-born little imagining how very much they resemble the tens of thousands of men at home who restlessly gnaw the bit of resentment—by which order can alone be secured, and leisure obtained for that cautious and steady progress by which advances, economical and political, which all consider desirable, may be safely made and successively rendered secure. I venture to say for John Bull and Sandy too, that there is not a single British Colony to which it does not delight them to hear that their brothers and cousins are going, or having gone, to learn that they are prospering in it. Nor is there not a single real grievance with which any of these colonies may be afflicted that does not meet with their sympathy, and whatever party may be in power, their ready co-operation, by all lawful means, to secure redress."

KNOWLSON'S COMPLETE FARRIER.

A CONSUMPTION.

It is hard to lay down proper rules on this head, or to give the owner or farrier such an explanation of the disease as may lead him to a proper knowledge of it. It has been above a match for many; but having in my long experience had many under my care in this dangerous disorder, I hope to be able to explain it as well as most people.

Symptoms. A Consumption is a want of nourishment, and a waste of flesh. The horse's eyes look dull, his ears and feet are commonly hot, he coughs violently by fits, sneezes often, and groans at the same time; he gleets at the nose, and sometimes throws a yellowish matter, rather curdled, from his nose; his flanks have a quick motion, and he has little appetite to hay, though he will eat corn, but he grows hot after it.

Causes. Damp stables are most likely to bring on this disorder, though it may be brought on by many other things. In my time I have known many horses suffer much by damp stables. I knew a gentleman who had two valuable horses, and he built a new stable for them without any air-holes above their heads. He put the horses in as soon as the stable appeared dry, and their heat soon caused the walls of the place to sweat, and to run down with water, by which means both the horses were thrown into a Consumption, and died. I mention this to caution others.

Cure. The first, and indeed one of the principle things to be done, is to bleed in small quantities. A pint, or at most a pint and a half, is sufficient at once, and the operation is to be repeated whenever the breath is more than commonly oppressed. We are assured, by dissection that in a Consumption both the glands of the lungs and the mesentery are swelled, and often indurated. The only medicines that can be depended upon, are mercurial purges and ponderous alteratives. I have already given you examples of the former, and the following is a formula of the latter. Mix

4 oz. of Crocus Metalorum.
1 do. Colomel pp.
1 lb. of Gum Guaiacum, finely powdered.

Give about an ounce every day in a mash of brand linseed. Iceland liverwort, a handful boiled in a gallon of water, is much better to make mashes up with than water; for it is a great helper of the blood. But it is to be observed that nothing will answer so good an end as spring grass; so that if the horse be afflicted with this disease in spring time, turn him out to grass as soon as you can; and if the nights be cold, turn him out in the day time, and take him in at nights. Salt marshes are the properest places when they can be met with.

When a horse has had this disorder, he can never more bear cold and hardservice as before. If the horse be of small value, the above medicines will be thought too expensive, and you may give tar-balls, of tar water. Fine Norway tar is of very great use in diseases of the lungs, and is be made into balls in the following manner, which will be useful either in consumption, a cough or an asthma, and help them as soon as most drugs that are made use of.

1 lb. of fresh Norway or Stockholm Tar.
4 oz. of Garlic.

Bruise the garlic, and work them up with liquorice powder into a paste, and give two ounces at a time every other day.

A SCOURING, AND OTHER DISORDERS OF THE INTESTINES.

You should consider well what the Scouring proceeds from,—whether it is caused by foul feeding, bad water, hard exercise, sudden heat or cold, an overflowing of the bile, or a weakness of the intestines.

If it is brought on by foul feeding, or bad water, it should not be stopped, but rather be promoted; for it should be remembered that nature by this means throws off the seeds of disease, and evacuates the morbid matter which would otherwise be retained to the great disadvantage, and perhaps to the destruction of the animal. The great difficulty therefore consists in knowing when these discharges are critical and salutary, and when detrimental and noxious; for the former must not be checked, but the aid of medicine must be called in to put a stop to the latter.

For instance,—if a healthy horse, upon taking a cold, or after hard riding, over-feeding, or at the beginning of a slight fever, have a moderate

purging, you must be careful not to stop it, but on the contrary to promote it, by an open diet, and plenty of warm gruel. But if this purging continue a long time, with smart gripings, and the inner skin of the bowels come away with the dung, and the horse loose both his flesh and his appetite at the same time, recourse must immediately be had to proper medicines; among which the following are very effectual, I do not wish any one to give medicines upon merely hearing the names of the drugs, but to know in what manner the drugs will operate before they give them. Take—

1 oz. of Rhubarb in powder.
2 drams of Myrrh, do.
2 do. Saffron.

Give altogether in warm ale, and warm water for two days after. This dose will only work gently, but will be of great service to the horse, as it will bring away the slime which lodges in the small intestines, and correct the bile of the stomach, which is the cause of this disorder. If the horse be a good one, I would advise the owner never to refuse giving medicines because of the expense, as they will soon make him ample amends by their salutary effects; and sometimes the desire of saving a few pence in a medicine has been the destruction of a useful horse.

But when the disorder continues, and the horse's flesh keeps wasting away, recourse must be had to astringents. Tormentil-root, (dried, and pounded in a mortar, and put through a sieve,) is one of the best astringents yet found out, though very little known. I heartily wish my fellow-creatures would make more use of this valuable root than they do. The dose is from an ounce to an ounce and a half. I believe that this valuable root has done more good in my time, in stopping looseness and bowel complaints, than any thing else. I have known plenty people who have spent pounds on physicians, and got no relief, and whose strength has been nearly gone, and their lives despaired of, but by taking the above in red wine, they have been restored. The dose is from half a dram to a dram, in a little red wine, four or five times a day. But you may say, *Where is this root to be got, as few of the druggist keep it?* I believe they do not; neither do I wish you to apply to them for it, they will give you something else that will not answer the purpose. It may commonly be found in dry land, where whins and brackens grow. It flowers all summer long; its top is small, something like southern wood; its flowers are small, yellow, and numerous; it is seldom above half a foot high; and its root is strong; in loose land and old cams as thick as a finger, but in fast bound land not so strong.

When the purging is attended with a fever, a different method of pratice is necessary. Take—

½ oz. of Rhubarb, in powder.
1 do. Lenitive Electuary.
½ do. Camphor.
1 do. Powdered Ginger.

To be given in a pint of ale. This is a very proper medicine when the horse is troubled with a fever; but if he have no fever upon him, give the following.

1 oz. of Tormentil Root in Powder.
½ do. Japan Earth, do.

Give these in red wine, or if that be thought too expensive, in oak bark tea. Japan earth is a great healer of the bowels. Repeat this last medicine three or four times, to allow it a fair trial; giving the horse at the same time but little exercise, for he cannot then bear much. Should this medicine fail, and the disorder increase instead of decreasing, which may be known by his flanks and belly being full and distended, and his appearing to suffer strong griping pains, give the following clyster.

½ oz. of Isinglass, dissolved in a quart of warm Milk.
2 do. Mithridate.

Sometimes the flux is so violent as not to be overcome by preceding medicine, when recourse must be had to the following. Boil a handful of oak bark in a quart of water, strain it off, and add—

2 oz. of Tormentil Root, in powder. 2 oz. Bole.

Give them all together. This should be repeated once a day, for two or three days.

The practitioner should carefully attend to the symptoms that accompany this disorder; for if the discharge be attended with an acrid mucus, or slime, the griping pains being very severe, there is then a sure indication that the common lining of the bowels is wasted away; and then it will be necessary frequently to inject the following clyster, warm, in order to prevent the fatal consequences which will otherwise soon ensue.

Four ounces of Starch, dissolved in a quart of water; half a pint of sweet oil, three yolks of Eggs, well broken; and a little loaf Sugar.

This will do for twice, at four hours' distance.

It is also necessary to observe that some horses, from having weak stomachs and bowels, throw out their aliment undigested, and their dung is habitually soft, and of a pale color; they also feed sparingly, and are always low in flesh. This complaint which often proves fatal at last, may be removed by the following medicines.

6 drams of Socotrine Aloes. 1 dram of Myrrh.
3 do Rhubarb, in powder. 1 do Saffron.

Make all up into a ball with syrup of ginger. After the above stomachic purge shall have been given two or three times, a pint of the following infusion should be given every morning.

Take Gentian, Winter Bark, Orange Peel, Columbia Root, Aniseeds, Fennel Seeds, and Camomile flowers of each a small handfull and of Orris Root, two ounces.

Boil all together in a gallon of strong ale; and when cold, clear it off and add one pint of spirits of wine. If this be thought to strong; two quarts more of ale may be added. This is an excellent cordial both for healing and strengthening the stomach and bowels. These are the best methods of treating the above disorders to which horses are often subject, and in which they are often lost for want of proper treatment.

Tents for the Provincial Exhibition.—We beg to call the attention of our readers at a distance to an advertisement in this day's issue, by which it will be seen that, with a view to secure ample accommodation for strangers visiting Brockville during the holding of the Provincial Exhibition in the month of September next, and to enable such to remain together during their stay, Mr. Williams of Rochester, who is to supply the Tents for the Provincial Association, will be prepared to let out family or party tents, capable of holding from 200 to 8 or 10 persons respectively at moderate terms, which may be learned on application either to the Proprietor or D. Wylie, Secretary of the Local Committee here. These tents being perfectly water-tight, and possessing every requisite for comfort, are fully qualified to answer the purpose of any ordinary building, and parties engaging them would only require to add a few cooking utensils, Buffalo robes, &c., to make their temporary home complete. We would reccomend an early application. —*Brockville Recorder.*

In calling attention to the above, we wish it to be understood that the accommodation for visitors in Brookville and neighbouring towns is not likely to fall short of former occasions; every exertion is being made by the Local Committee to get such as may visit the fair accommodated at the usual rates of charge. Parties, however, wishing to keep together, and enjoy the excitement of a novel mode of life, would do well to hire tents, and thus have an independent establishment of their own at a trifling cost. Mr. Williams is a very respectable man, and will supply a good article;—he was elected an *Honorary member* of the Agricultural Association of Upper Canada. We hear that a party from Rochester is coming with a unique tent; and that a steamer also has been chartered to leave that port, and remain in the river during the fair. Altogether the prospect is very cheering.—[*Editor Agriculturist.*]

Stewart's Patent Stump-Puller.—We have been requested to call attention to this machine, manufactured by W. Willis of Orange, Massachusetts.—These machines are constructed with a power from 250 to 1,000 tons purchase, varying in price from $50 to $200. The American Agricultural press speaks highly of them. Any mere verbal description without an engraving, which we have not received, would be of little worth.

A sample of Australian wheat—a very remarkable variety of the common wheat—is exhibited in New York. The ears greatly resemble those of Barley; they are four cornered, and armed with stiff, strong, barbed bristles. The grain is uncommonly full and round. They talk of forty or fifty bushels of this wheat to the acre, having been raised in the course of the present season in the neighbourhood of Flatbush.

POTATO ROT.

From present appearances, this district of country is more severely visited with this disease, than at any former period. Whole fields are entirely denuded of their leaves, and have every appearance of having passed through a very severe frost; and what is entirely variant from the experience of former years, it is the early planted and early varieties that are the most severely attacked, and even those on the dryest and most meagre soils, and sand ridges, are in no degree exempt, contrary to the heretofore received opinions and experience on those points.

The late planted patches, say on the 1st of June and later, are as yet free of the disease, but if they hold out it will be an anomaly in this pestilence.

The cause is thus far inscrutable. There are no peculiar insects or worms to be found in, on, or about the vines; nor is there any particular fungus, or filiform matter to be observed on the stems or foilage. From the fact that those fields which are very foul with weeds escape best, it has been argued that the disease was attributable to the effect of a hot sun. but this can hardly be applied this year, for there has been no such this season; in fact all the hypothesis fails.

It has like the cholera an atmospheric source; a virus is produced, that is carried to the tubers by the circulation, thus poisoning and destroying the whole plant.—*New Yorker.*

Parsnips.—This root has long been an inmate of the garden, and was formerly much used. In the times of Popery, it was the farmer's Lent root, being eaten with salted fish, to which it is still an excellent accompaniment. "In the north of Scotland," Dr. Neill observes, "parsnips are often beat up with potatoes and a little butter; of this excellent mess the children of the peasantry are very fond, and they do not fail to thrive upon it. In the north of Ireland, a pleasant table beverage is prepared from the roots brewed along with hops. Parsnip wine is also made in some places; and they afford an excellent ardent spirit, when distilled after a similar preparatory process to that bestowed on potatoes destined for that purpose." It is an excellent food for cows, and its fattening qualities I have already noticed.—*Farmer's Guide.*

Monster Beans.—We have twice lately noticed the extraordinary growth of some specimens which have been shown to us, of the Rocky Mountain bean, recently introduced into this country. We believe, if we recollect aright, the former specimens measured respectively 24½ and 22 inches; but yesterday we were informed by Mr. John Warcup, gardener, of Laprairie, that he has a bean growing in his garden 27 inches in length. He says that the Rocky Mountain bean is an excellent and very succulent vegetable, fully equal in flavour to the common scarlet runner of this country.—*Montreal Transcript.*

Model Farm.—We are much gratified to see by the Quebec papers, that the gentlemen of the Seminary in that city have determined upon establishing a model-farm, on the property at the Cote Saint Paul. We trust we shall not be thought officious if we solicit the attention of our friends, the gentlemen of the Montreal Seminary, to the patriotic and enlightened conduct, in this matter, of their brethren in Quebec. —*Mont. Herald.*

Fashion makes foolish parents, invalids of children, and servants of all.

Trust him little who praises him least, who is all indifferent about all.

THE POTATO ROT.—We mentioned in the *Commonwealth* a few days ago the substance of a conversation with Mr. Flanders on the subject of the potato rot. It may be remembered that Mr. Flanders' proposal is to sift air slacked lime upon the potatoe vines while wet with a heavy dew or rain.

On this subject Mr. Nathan Winslow, in a communication to the *Portland Advertiser*, writes that he has no doubt that Mr. Flanders is correct in his discovery of a remedy for the potato disease—both as it regards the cause and the cure. Mr. W. says personal observation last year, fully convinced him that the disease is produced by means of insects feeding upon the vine, and that he should have tried the proposed remedy and communicated the result to the public, had not the season been too far advanced when the idea recurred to him. He was induced to try lime water, from having found it effectual in preventing insects from stinging the leaves of plum trees. [Boston Commonwealth

PACKING FLOUR.—An experiment has been made by an inspector of flour at Cincinnati, for the purpose of ascertaining whether flour closely packed, will keep from souring as long as it loosely packed. A tight half barrel filled loosely with flour was put away in a place possessing no more than ordinary advantages as a ware house, and at the fifth year the flour became somewhat rancid and did not sour nntil the ninth year. This experiment has proved that flour loosely packed would be preserved in good order much longer than that put up in the ordinary manner.

BUTTER.—Complaints have been received from England that the butter from Canada is too much salted. This is a great fault, and if not avoided, will bring Canada butter into bad repute in the English market. There seems to be very little attention paid to this matter by butter makers, for most of the fresh butter brought into our market is so salt that it is necessary to work it through water, before it is fit for the table. [Hamilton Spectator.

THE WHEAT CROP OF 1851.—The reports from the various grain growing parts of the Union, indicate that the wheat crop of the present year will be the heaviest ever taken from the earth in the Western States. In Ohio, the crop is a very large and fine one. In New York, Indiana, Michigan and Wisconsin, the yield is also very large, and the wheat of the very first quality In Michigan, particularly, the yield exceeds any thing ever known, even in Michigan.

RAPID HARVESTING.—In the county of Sciota, Ohio, twenty-seven acres of wheat were harvested in one day, by means of a patent reaper. The work was well done and the yield of wheat good.—*Palladium.*

Money skilfully expended in drving land by draining or otherwise, will be returned with ample interest.

Weeds exhaust the strength of ground, and if suffered to grow, may be called garden sins.

Grow nothing carelessly; whatever is worth growing at all, is worth growing well.

Horticultnre.

THE USE OF FLOWERS.

BY MARY HOWITT.

GOD might have made the earth bring forth
Enough for great and small--
The oak tree and the cedar tree,
Without a flower at all.

He might have made enough, enough
For every want of ours—
For luxury, medicine and toil,
And yet have made no flowers.

The ore within the mountain mine
Requireth none to grow;
Nor doth it need the lotus flower
To make the river flow.

The clouds might give abundant rain—
The nightly dews might fall—
And the herb that keepeth life in man
Might yet have drunk them all.

Then wherefore, wherefore were they made
All dyed with rainbow light;
All fashioned with supremest grace,
Upspringing day and night:

Springing in valleys green and low,
And on the mountains high,
And in the silent wilderness,
Where no man passes by?

Our onward life requires them not—
Then wherefore had they birth?
To minister delight to man—
To beautify the earth:

To comfort man—to whisper hope,
Whene'er his faith is dim;
For whoso careth for the flowers
Will much more care for him.

MULCHING.

A "Practical Mulcher," writing from Dedham, Massachusetts, whose communication is published in the *Holticulturist* for May, says:

I regard *mulching* as *our* prime and especial necessity, *the* most indispensable thing in North American Agriculture. For in the first place, the operation of mulching, or covering over the surface of the ground, prevents the evaporation of the moisture that is so requisite to the rooting of new plantations, to the development of luxuriant foliage; and the production of perfect flowers, and fair, juicy, large-sized fruits.—Again: the operation of mulchinn not only prevents, to a great extent, the escape of moisture, but also, and what is of greater importance, the passing away from the earth of the volatile gases, that are held in solution in the water, and which, sucked in by the minute mouths of the radicles or spongioles, give nourishment to the plant or tree.

That mulching is of great value in the case of young and newly planted trees, by preventing the process of evaporation, is universally admitted in theory, and to a

certain extent carried out into practice; and yet but few seem to be aware of its value in retaining the nourishment as well as the moisture in the earth, and thus, both those means, contributing to the luxurious and healthful condition of plants and trees already rooted and well established in the soil. But observation, however, as well as actual experience, has fully convinced me that trees will not only put forth more luxuriantly, and grow more vigourously, but that the fruit will be far larger, fairer, and jucier, for mulching during the hot season. And I hazard the observation, that in the culture of pears, and certain kinds of apples, such as the Roxbury russet, that are generally small and knurly on a gravelly bottom, careful mulching is almost equal to a clay subsoil.

And here let me say, by way of parenthesis, that in the cultivation of these fruits, it is not, I think, any nutritive element in the clay soil, but only its power of retaining moisture, that gives it the advantage over a gravelly substratum. By carefully mulching, however, I do not mean a wisp of straw, hay, weeds, or small brush, nor a shovel of spent tan, hub-chips, or sawdust, placed just round the trunk of the tree, but a covering of ground, if possible, as far as the roots extend. There are some absurd people who seem to think, if we are to judge them by their practice, that somewhere at the butt of the tree is a great mouth in which the tree takes its food and drink; and accordingly, they put all the nourishment, whether liquid or solid, "right rouud" the trunk. Whereas, the truth is, the numerous little mouths that drink in the moisture, and the nutritious elements that are dissolved in it, are in the little spongioles that form the very terminations of the radical branches; and our course of treatment should be based upon this fact, in watering, manuring and mulching.

Mulching, then in the first place, prevents, in light, gravelly soils—and in dry seasons, in all soils—the evaporation of the moisture necessary to that flow of sap, that shall make a luxuriant growth, fine foliage, and fair, large, juicy fruit.

And second, as the elements that nourish the tree are contained in the moisture in solution, and a dry state of the earth must thus cut off the supply of food, mulching actually nourishes the tree. In proof of this, I might, would my space permit, adduce numerous facts; but experiments are so easily tried, that such evidence is hardly necessary here.

LIQUID MANURE FOR FRUIT TREES.

It is a fact satisfactorily established with me that there is nothing connected with a farm in the line of fertilizers, that appears to produce a greater effect on fruit trees than liquid manure. Thousands of gallons of this invaluable fluid are wasted on farms annually, which, if applied to the trunks and roots of trees, would benefit them ten times more than it would cost to make an application of the liqued. No one need apprehend any danger in applying it, for it bites not, nor does it cause any serious derangement in the olfactory region. Where trees have been injured by drought, and have been set out heedlessly, it produces a most striking effect, causing a circulation of the sap at once astonishing. It is unquestionably preferable to solid manures, for its effect is almost immediate. It penetrates the pores of the earth and comes in contact with the roots and fibres as soon as an application is made; whereas, in applying coarse manure, such is not the case, it requiring several showers to wash the strength of it out.

The manner in which I have applied it is to dig a cavity around the body of the tree, and then fill up with the liquor. In a few moments, it will be absorbed ready for replacing the dirt, thus preventing evaporation. The introduction of a pailful around the trunk of a tree, at an interval of a month during the growing season, is sufficient to produce the most astonishing results. An extraordinary growth immediately commences and shoots are forced out in a few weeks, truly astounding both in length and size. I have tried soap suds and am convinced that they do not contain all the invigorating and enriching powers common to liquid manure. It must be acknowledged, however, that soap suds are efficient, causing a rapid growth when judiciously applied, but not equal in my opinion to the liquid.

Now, without being considered wayward in advancing ideas, I would suggest that those who have the fluid on hand, and are not backward in coming in contact with dirt, would try the liquid and see it the effects are not satisfactory.

W. Tappen.

Baldwinsville, N. Y. August, 1851.

THE VALUE OF TREES

Beside their intrinsic value, how desolate is a home on a farm or in the city, without fruit or ornamental trees. To the generality of people you might as well recommend a person without mind, as offer to sell a homestead without trees or shrubbery. One thing should be observed in planting, to select good varieties of fruit trees, as it is a disgrace to any one to plant and grow others. Be mindful of these things and a reward will follow.

We are reminded of this subject by a sale of land just made in this vicinity—one particular advantage and inducement to the purchaser being the assortment of choice trees already grown to his hands.

J. H. W.

THE USE OF FRUIT.

Instead of standing in any fear of a generous consumption of ripe fruits, we regard them as positively conducive to health. The very maladies commonly assumed to have their origin in the free use of apples peaches, cherries, melons and wild berries, have been quite as prevalent, if not equally destructive, in seasons of scarcity. There are so many erroneous notions entertained of the bad effects of fruit, that it is quite time a counteracting impression should be promulgated, having its foundation in common sense, and based on the common observation of the intelligent. We have no patience in reading the endless rules to be observed in this particular department of physical comfort No one, we imagine, ever lived longer or freer from the paryoxisms of disease, by discarding the delicious fruits of the land in which he finds a home. On the contrary, they are necessary to the preservation of health, and are therefore caused to make their appearance at the very time when the condition of the body, operated upon by deteriorating causes not always understood, requires their grateful, renovating influences.—*Boston Med. and Surg. Journal.*

THE GREEN ROSE.—The Raleigh (N.C.) *Register*, in copying the account of the production of the blue rose at Paris by artificial crossings, adds the following notice of the green rose, which is to be found in some portions of that State:—

"We can add to this the green rose of North Carolina, which, though the creature of science, is sufficiently well known in parts of this State to claim a rank among the above floral novelties. The rose is identical with our common dahlia, except in color, the variation in which is supposed to have been produced by the accidental intermingling of the roots of the rose tree with those of the common sumach. The peculiarities of the new varieties are perpetuated by cuttings or otherwise. It is quite common in the county of Bladen, and some few specimens exist in the town of Fayetteville."

BLUE ROSE.—The horticulturists of Paris, (says a correspondent of the New York Express,) having succeeded by artificial crossings in obtaining a natural rose of a blue color, which is the fourth color obtained, by artifficial means—that and the yellow or tea rose, the black or purple rose and the stripped rose, being all inventions, and the result of skilful and scientific gardening.

TO KEEP PRESERVES.—Apply the white of an egg, with a suitable brush, to a single thickness of white tissue paper, with which to cover the jars, overlapping the edges an inch or two. No tying is required the whole will become, when it drys, as tight as a drum.

GOOSE BERRIES.—We have been presented with a few Goose Berries from the Garden of Mr. Wm. Reeves, West Belleville, one of which measured 4⅝ inches in circumference. Who can beat it?—[Belleville Intelligence.

WEATHER SIGNS FROM PLANTS.—Some one has said that not only the coming weather may be foretold by an acquaintance with flowers, but also the time of the day and the time of the year; and, in fact, Linnaeus possessed such a knowledge of them that he needed neither watch, nor calendar, nor weather-glass. Lord Bacon observed that when the flowers of the chick-weed expanded fully and boldly no rain will succeed for some hours or days. If the flower of the Siberian sow-thistle keep open during the night, rain it is said, is certain to fall the next day. The leaves of the trefoil are always contracted at the approach of a storm. If the African mari-gold does not open its flowers by 7 o'clock in the morning, rain may be expected with certainty on that day. An uncommon quantity of seeds is produced by white thorns and dog rose bushes in wet summers, and this is considered a sign of a severe winter. Many plants with compound flowers direct them towards the east in the morning, carefully following the direction of the sun, and appearing towards west in the evening; but before rain they are punctually closed as, with the tulip. A species of wood sorrel doubles its leaves before storm, but unfold them under a clear sky. Cassia and the sensitive plant do the same. The flowers of the pimpernel appearing widely open in the morning indicate a fair day, and, if the petals are closed rain my be expected soon. Nettles appearing abundantly in winter indicate a mild season.

AN ORCHARD OF OLDEN TIMES.—In 1597, John Gerade published in London, a work on farming and gardening, in which, to encourage those of his day to plant orchards, he says:—"The tame and grafted apple trees are planted and set in orchards for that purpose. Kent doth abound in apples of most sorts, but I have seen in pastures and hedge-rows, about the grounds of a worshipful gentleman dwelling two miles from Hereford, called Master Roger Bodnome, so many trees of all sorts that their servants drink but what is made of apples. The quantity is such that by the report of the gentleman himself, *the parson hath for tyth many hogsheads of cyder.*—The hogs are fed with the fallings of them, which are so many that they make choice of the apples they do eat, who will not taste of any but the best—an example doubtless to be followed by *gentlemen who have land and living.*

LARGE CARGO OF FRUIT.—A schooner arrived at New York from Baracoa, on Wednesday, bringing 12,298 pine-apples, nearly 12,000 plantains, 9,000 cocoanuts, about 100,000 bananas, and over 1,500 boxes of oranges.

The Irish Census

ABSTRACT OF THE IRISH CENSUS IN 1841 AND 1851.

Houses: Inhabited	1,328,839	1,047,735
Uninhabited, built	52,208	65,159
building	3,313	2,113
Total	1,384,360	1,115,007
Families	1,472,287	1,207,002
Persons: Males	4,019,576	3,176,727
Females	4,155,548	3,339,067
Total	8,175,124	6,515,794
Population in 1841	8,175,124	
" 1851	6,515,794	
Decrease	1,659,330	

Or, at the rate of 20 per cent.

Population in 1821	6,801,827
" 1831	7,767,401
" 1841	8,175,124
" 1851	6,515,794

Or, 286,033 souls fewer than in 1821, thirty years ago.

A considerable proportion of the deficiency in the Irish population is attributable to the scarcity of food, to the sufferings of the poor from the want of fuel and shelter during inclement seasons, and to the scorge of the cholera, diarrhœa, influenza, and other epidemic and endemic diseases, which have been carrying on their destructive operation in that country with unusual force during the last ten years. The principal cause of deficiency, however, will not be found in these evils, but in the progress of emigration, affecting the population throughout the whole of the term under consideration, and during the last two or three years, at a rapidly increasing ratio. During the last ten years the emigration from the United Kingdom has amounted to above 1,600,000 of which amount, Ireland has furnished more than its natural proportion, sending out numbers by whose departure the country has been in some parts completely drained of its population. This fact is referred to for the purpose of noticing a feature it presents, and which, if it should not at first attract attention, ought to be considered, as it furnishes an element of importance in any calculations that may be made for the purpose of accounting for the strange aspect which the Irish census of

year will present. It should then be observed, that the emigrants from Ireland generally are not the aged nor the very young, but persons whose removal would in a few years sensibly affect the natural increase of the population by the increase of births over deaths. The necessary consequence has been, that great numbers of those births which would have been registered in Ireland have been registered in the United States or the colonies, and many of them in this country.—*News of World.*

Lord Brougham.—There is reason to apprehend, has found it necessary to retire, for a time at least, from public life. His restless, and to himself resistless, energies, have it is feared, proved more than a match for a constitution certainly of much greater than ordinary strength, and in the maturity of his intellectual greatness—at a period of life distant from advanced age—Lord Brougham finds himself compelled to seek retirement and repose. It has been said of many men that only in business—only when actively employed—they were at rest. No other description would accurately portray Lord Brougham. Occupation was his idol; and his biography, be it written when it may—and the day is distant, we trust, when his character and his labors will become matters of comment or description to his successors—will disclose an amount of work performed by a single individual, which, when looked at in the mass, will appear incredible. The law was his profession; but in science, in literature, in legislation, in politics, in moral and physical philosophy, in all, the observer of the times will find evidence of the activity and of the great ability of Lord Brougham. To him we owe much of the education, and many of the educational institutions of our era—an era of which he himself will ever stand forth as one of the most distinguished ornaments. His Lordship has quitted town for Brougham Hall. In the debate on Chancery Reform on Monday week, His Lordship alluded to the infirm state of his health, which, he said, would preclude him from taking any further part in the business of the Session, but spoke as forcibly as ever in reprehension of the enormous vexations, delays, and costs attendant upon the simplest proceedings in Chancery.

Mr Silk Buckingham has at length succeeded in his long contest with the East India Company for indemification for his losses as an Orential Journalist. The Bill before Parliament for restitution has been withdrawn, the Court of Directors and the Government having agreed to settle upon him a pension of £400 per annum.

Kilns.—Joseph Christian Davidson, of Yalding, Kent, Brickmaker, for improvement in lime and other kilns and furnaces. Patent dated November 2nd, 1850. "1. Mr. Davidson's improvements have relation to lime kilns, in which, as usually constructed, the fire has been lighted in the kiln underneath an arch built of the limestone to be calcined. According to this method, a great waste ensues from pieces of the stone chipping off by the action of the heat and falling into the fire, from which they have necessarily to be removed. It is now proposed to have the fire-place alongside of the kiln, and to conduct the flame and products of combustion through the side of the kiln, to act upon the limestone, which is to be piled in the kiln on an arch built in the usual manner, and so as to act as a reticulated flue. 2. The same principle is applied to the kilns used for baking bricks, the fire-places being arranged at the side of the kiln, in such position as to make the openings in the wall thereof the throats of the furnaces."—*Mechanics' Magazine.*

The Famous St. Charles Indian Bread.—Receipt for making the St. Charles Indian Bread as prepared at the St. Charles Hotel, New Orleans:—

Beat two eggs very light, mix alternately with them one pint of sour milk or buttermilk and one pint of fine Indian meal, melt one table spoonful of butter and add to the mixture, dissolve one table spoonful of soda or salaratus &c., in a small portion of the milk and add to the mixture the last thing, beat very hard and bake in a pan in a quick oven.

The above receipt, Mr. Editor, was sent by a lady friend in South Carolina, to the lady of a neighbor of mine, in the upper end of our country. I have eaten of the bread, and unhesitatingly pronounce it the very *ne plus ultra* of Indian Bread.—[Germantown Telegraph.

How to Toast Bread.—If you would have a slice of bread so toasted as to be pleasant to the palate, and wholesome and easily digested, never let one particle of the surface be charred. Chestnut brown is even too far deep for good toast; and the color of a fox is rather too deep. The nearer it can be kept to a straw color, the more delicious to the taste, and the more wholesome it will be. This is done by keeping the bread a proper distance from the fire, and exposing it to a proper heat.

A New Remedy in Diarrhea, Cholera Infantum and Cholera Morbus.—We have the following recipe, says the Tribune, from the Professor of Chemistry in the New York Hospital: "I would wish, through the medium of your paper, to give publicity to the fact, that I have seen instant relief given in cases of Diarrhea, by the use of Hidro-Sulphuric Acid, a tea spoonful of a saturated solution being mixed with four times its bulk of water. Also in a case of Cholera Infantum, in which the child was very much reduced, and the stomach in an extreme state of irritability, so that nothing would be retained, this remedy was administered with ease and the child immediately improved, and has since recovered. Believing that this is a new remedy, and that there is no reason to apprehend any effects where it does not produce a cure, and believing that it has some specific effect in counteracting the cause and immediately arresting the disease, I am yours, respectfully, Laurence Reid.

The Charm of an Old House.—"I love old houses best (says Southey,) for the sake of odd closets and cupboards, and good thick walls that don't let the wind blow in, and little-out-of-the-way polyangular rooms with great beams running across the ceiling—old heart of oak, that has outlasted half a score of generations—and chimney-pieces with the date of the year carved above them, and huge fireplaces that warmed the shins of Englishmen before the House of Hanover came over. The most delightful associations that ever made me feel, and think, and fall a dreaming, are excited by old buildings—not absolute ruins, but in a state of decline. Even the clipped yews interest me; and if I found one in my garden that should become mine, in the shape of a peacock, I should be as proud to keep his tail well spread as the man who first carved him."

Editor's Notices.

NOTICE TO SUBSCRIBERS.—The publication of our next number will be delayed a few days, in order to give a full and correct report of the proceedings of the Brockville meeting. We purpose printing a list of all articles entered as well as the premiums;—a course which we have been given to understand would be interesting and satisfactory to a large class of our subscribers.

SALT AS A MANURE.—G. M.—We will either write you privately or prepare an article for the *Agriculturist* on the various points of your enquiry, as soon as we can command a little leisure. We have applied Salt in the old country to different crops, with but little apparent effect. When it can be obtained sufficiently cheap, it may be advantageous to use it in preparing composts; and that it may have onsome soils, particularly in situations remote from the sea, a beneficial influence on vegetation is more than probable. Of its value, however, as a steep for seed grain, there can be no question. The farmer cannot pay too strict attention in selecting and steeping his seed wheat; the neglect of this precaution causes an immense annual loss.

STATE OF THE CROPS, &c.—The weather of late has been favorable for completing the harvest, which with the exception of Indian Corn and a few late spring crops, may now be said to be secured in Upper Canada. The yield of wheat will vary much in different localities; the frost and weevil having done serious mischief in some parts, and the rust will be found to have injured the quality in others. The quantity, however, may be upon the whole, considerably above an average; but from the wetness and low temperature of the summer, and the heavy rains that fell during the first half of the last month, we are much inclined to think that the quality will be found, in several places, considerably injured. All kinds of spring grain are abundant, particularly in straw. Indian Corn is backward, but considering all circumstances is looking healthy; much will depend, with regard to this crop, on the character of the present month. Hay is heavy; but the quality to a large extent owing to over ripeness and wetness of the weather, will be found inferior. The potatoe disease has manifested itself generally since our last issue, and, judging from the appearance of the haulm, the mischief seems rapidly increasing. We have recently been through a considerable portion of the central and eastern sections of the Province, and observed scarcely a field or garden that was not more or less affected.—The accounts from the United Kingdom and Europe generally, continue favorable as to the crops, and very little is said of the potatoe blight; prices continue rather to look downward, In Toronto the amount of business doing is as yet very limited; most of the wheat offered being out of condition; selling at about 3s. 6d. per bushel.

THE VALUE OF WELL BRED STOCK.—We find it stated in an English paper that that unrivalled breeder of South Down Sheep, Mr. Jonas Webb, of Cambridgeshire, who won 7 prizes for Southdowns at the recent Windsor show; obtained at his last annual letting, as hire for the use of a ram, which though exhibited at the Royal Agricultural Show at Exeter, last year, was not successful there, the sum of 99 guineas!

HORSE MEDICINES. — We perceive that Messrs. Leach and Paul, Veterinary Surgeons of this City, have announced their intention to supply country merchants with carefully prepared medicines, ointments, linaments, &c., for the various diseases and accidents to which that noble and useful animal—the Horse—is liable. If this project is extensively carried out, it will confer a real boon on farmers; particularly those residing in distant places, where the services of skilful farriers, or even the commonest remedies can seldom be obtained. The extensive experience of those gentlemen affords the public a guarantee against quackery, and the many worthless nostrums now so commonly imported from the States.

THE FARMERS' GUIDE, No. 22.—This number which we have received through Mr. Rowsell, of this City, completes the work. We have on several previous occasions expressed our high opinion, in common with the whole British and American Press. of the merits of this thoroughly practical and scientific publication; which brings down to the present hour the various improvements that have been introduced into the practice of Agriculture, in the best cultivated districts of England and Scotland. Professor Norton's American Notes give it an additional value to farmers on this side the Atlantic. The "*Farmer's Guide*" may now be obtained complete in two large octavo volumes containing 1,600 pages, including 600 woodcuts, and 14 engravings on steel, handsomely bound, for the extraordinary low price of six dollars! We say to our readers—*to young farmers especially*—procure at once this standard publication. study it, make yourselves masters of its contents, and we are sure that you will thank us for having brought it under your notice. The enterprising American Editor and Publishers are eminently deserving the thanks and cordial support of every intelligent and improving farmer; a class of men that is every day increasing.

TORONTO MECHANICS' INSTITUTE.—The Directors of this valuable and prosperous Institution will, we are happy to learn, get up another of their attractive and instructive Exhibitions of the works of our Colonial industrial arts, which have elicited so much praise, and imparted no less instruction and pleasure in former years. From all we hear the approaching Exhibition bids fair to outstrip any of its predecessors. We hope all our country readers coming to the city will avail themselves of the opportunity of visiting the Exhibition, which they can do for a mere nominal charge.—It will commence on Wednesday, October 1, and continue open for a fortnight.

TALLOW MAKING IN AUSTRALIA.—It is reported on reliable authority that no fewer than 743, 513 sheep, and 45,050 horned cattle were boiled down for tallow in 1849, in the two colonies of New South Wales and Port Phillip. This business is rapidly on the increase. What vast means of sustaining an indefinately increasing population does mother earth yet possess!

THRASHING MACHINE.

LETTERS PATENT.

Time and Labor Saved are Money Earned.

THE SUBSCRIBERS having secured to themselves the exclusive right of manufacturing and vending to others to use within the territory of Upper and Lower Canada,

SEVERANCE'S CELEBRATED IMPROVED HORSE POWER & THRASHING MACHINE one of the most valuable time and labour saving Machines ever devised by human ingenuity, respectfully inform the public that they have just completed a new and extensive Factory on Wellington Street, extending from Prince to George Street, which gives them more than double the accommodation they had in the old shops, which will hereafter, they trust, enable them to supply the whole farming community of the United Provinces with a Machine that will thrash and clean more grain in a day, with less expense and with greater cleanliness, than any other known invention—only requiring two horses.

We beg leave to say to our customers and friends, that we are again prepared to furnish those in want of Thrashing Machines with an article superior even to those heretofore manufactured by us.

Our long experience in making and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of work, and amount of it they can do, our Thrashing Machines are unequalled by any in use. And while the grain is thrashed clean and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill or any market.

All orders addressed to us or our Agent, WM. JOHNSON, will be promptly attended to.

Machines shipped to any port in Canada, and every one warranted to be as good as recommended.

Liberal terms of payment allowed.

B. P. PAIGE & CO.

Whereas, Letters Patent were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using or manufacturing any imitation article, as all infrigements will be dealt with according to the law of the land.

All genuine Machines will be accompanied by a Deed signed by B. P. PAIGE, the owner of the right, giving the purchaser the right to use or transfer the same. Without such a Deed no person will be safe in purchasing or using said Machines.

B. P. PAIGE.

Agent at Hamilton, Mr. Raswell Wilson.

Toronto, July 15th, 1851. 42-6m

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,

Near the Toronto Necropolis, East of Parliament Street

N.B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

Agricultural Works.

For sale by A. H. Armour & Co.,

KING STREET, TORONTO.

STEPHENS' and Norton's Farmer's Guide. 2 vols. New Edition; just completed.
Knight's Farmers' Library; Animal Economy. 2 vols.
Stephens' Book of the Farm. 2 vols.
Sproule's Practical Agriculture.
Falkner's Farmers' Treasure—a Treatise on Manures.
The Farmer's Mine, by Heermance, revised by Allen.
Fessenden's Complete Farmer and Gardener.
Norton's Elements of Scientific Agriculture.
Boussingault's Rural Economy.
Smith's Productive Farming.
Johnston's Agricultural Chemistry.
Johnston's Lectures on Practical Agriculture.
Johnston's Use of Lime in Agriculture.
Liebig's Agricultural Chemistry.
Cleghorn's System of Agriculture, with Engravings.
Dana's Farmers' Muck Manual.
Squarrey's Agricultural Chemistry.
Rodger's Farmers' Agricultural Chemistry.
Strachan's Agricultural Tables.
Shier's Davy's Agricultural Chemistry.
The Horse, by Youatt, with Supplement by Spooner.
Stewart's Stable Economy.
The Ox, by W. C. L. Martin, of the Zoological Society.
White on Cattle Medicine,
Carter and Youatt's Cattle Doctor.
Youatt's Sheep, their Breeds, Diseases, &c.
" The Pig, or treatise and management of Swine.
Blacklock's Treatise on Sheep.
Boswell's Poultry-yard.
Bevan on the Honey Bee.
Miner's American Bee keeper's Manual.
Alcott's Produce Tables.

A. H. ARMOUR, & Co.

Toronto, July 12, 1851. 3t

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CANADIAN AGRICULTURIST.

" The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR

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ADDRESS,

Delivered by the President of the Provincial Agricultural Association, at the Annual Fair, at Brockville, on Friday, September 26, 1851.

Ladies and Gentlemen;

Montesquieu states, in his historical relations of China, a ceremony of opening the grounds, which the Emperor performs every year. The design of this public and solemn act is to excite the people to tillage. Further, the Emperor is every year informed of the husbandman who has distinguished himself most in his profession; and he makes him a Mandarin of the eighth Order.

Among the Ancient Persians, the Kings quitted their grandeur and pomp, on the eighth day of the month called Chorremruz, to eat with the husbandman.

These Institutions were admirably well calculated for the encouragement of Agriculture; but, we will at present avoid all abstruse speculations relating to the method of Agriculture, as practised in ancient times, to leave room for matter more immediately demanding the attention and consideration of the Members of this Association.

The favorable circumstances connected with this sixth annual meeting of the Agricultural Association, now being held in the Town of Brockville, will be witnessed with satisfaction by the Public at large.

Since our last meeting in the Town of Niagara in September 1850, a law has come in force establishing a Board of Agriculture in

this Province, by which it is provided that the Presidents of the several County Agricultural Societies, shall be Directors of the Agricultural Association, and by a Statue passed by the University Senate a Professorship of Agriculture is appointed in the Toronto University, with a portion of the University grounds, to be used as an experimental farm.

Another law was passed in the last Session of the Provincial Parliament, establishing a new Agricultural Code, wherein a liberal sum is granted, for the encouragement of Agricultural Societies, and forming an intimate connection between County and Township Societies, and also between the several County Societies and the Board of Agriculture.

The principal feature of this connection is, that, in addition to the money granted, the Secretaries of each County Society shall make an annual Report of their proceedings to the Board of Agriculture; from which reports the Board are compelled to make a general Agricultural Return to the Government and Parliament, in order that the same shall be examined and printed for circulation throughout the country, thereby bringing into one view annually all statistics, and other useful matter relating to the Agriculture of the Province.

In carrying out the views of the Legislature, one of the first steps taken by the newly appointed Board of Agriculture, was to offer a reward of £50 for the 4 best Reports, made by the Secretaries of County Societies, viz. £20 for the first best, £15 for the second best, £10 for the third best, and £5 for the fourth best Report for the year 1851.

Probably no other country has such liberal protection from the Legislature for the encouragement of Agriculture, as granted in the last Session of the Provincial Parliament. The liberal bounty to the several County and Township Societies, deserve the particular care and attention of the Agricultural community.

Everything is deemed excellent, either upon its own account, or for the sake of something else. Knowledge unites these two, for in itself it affords us pleasure, and is sought on account of its utility, therefore, it is confidently hoped, that our national Education, and common school system will infuse into the minds of the growing generation, that moral character, and steady useful Agricultural knowledge, so essential to the comfort, happinesss, and welfare of our rural population.

In addition to the pleasure of reading religious, and other books of merit, in the winter evenings, at the fire-side; reading of Agricultural books will be found both entertaining and instructive to all the members of the farmer's family.

When tillage begins, other arts follow, farmers therefore, are the founders of human civilization; while the people of a country are industrious, and that industry well directed, they never can be poor. The laws of a nation ought to be improved from time to time, to keep pace with the accession of knowledge which the people acquire, and with the necessities of the country as it becomes more populous.

And these great gatherings of Farmers at our annual Exhibitions, will, by mutually exchanging their several opinions, wonderfully conduce in accomplishing a uniform system of internal improvement here we have before us full samples of the various productions of the Country, and a fair specimen of the perfection, ingenuity, and skill of our mechanics, and, what is still more pleasing, there is a great variety of the elegant handy works of the ladies, and artists.

Upon all these, prizes to the amount of over twelve hundred pounds have been awarded, and altho' in such a multifarious and complicated work of awarding the various premiums, some persons whose property has come the very nearest to gaining prizes, may feel disappointment, still the public at large will give great praise to the judges for the honorable manner in which their arduous duties have been discharged.

It affords us much satisfaction to find so many of our neighbors from the United States competitors for premiums, and to the American Mechanic we cannot withhold our praise for bringing over so many specimens of useful implements of Husbandry, and labor-saving tools, fit for the husbandman's use, these, with the like productions of our own country, have well repaid the intelligent farmer, any length of journey to Brockville.

In making up the premium list by the official Board, it may be found, in working out the whole, that some slight defects will be observed; every suceeeding year has made some improvement, in this department; if any discrepancy or anomaly should still remain, as we have now by the new Agricultural Code, for Directors, the Presidents of every County Agricultural Society in the Province; an opportunity will offer at the annual meeting in the Committee Room to-morrow, of taking a general vote upon such points, as any Director may desire to have altered.

In improving and carrying forward our Agricultural advantages, the members of the Agricultural Board are desirous of drawing the attention of the Agricultural Societies, in giving

encouragement to a more general system of rotation crops, and a better stile of husbandry suited for bringing every sort of crop that can be tilled in our fertile soil to the greatest perfection; this ought to be considered the first point in our social system, the waste of human labor must be arrested to make a farm profitable, which can only be done by cultivating a less quantity of ground, where help cannot be had, and doing the work in a more perfect manner, abundant quantities of roots and other food for stock should be raised before we can begin to excel in rearing and supporting the best breeds of horned cattle, sheep, and swine, still it is gratifying to witness the great improvements that are at present going forward in this branch of our rural economy.

Every farmer must rightly consider his strength and means to cultivate his farm, as well as the quality of soil, the crop for which it is best suited, and the stock it will maintain, but above all other grain crops, wheat and Indian corn should have the preference, and most of our land, if managed with judgment, can be tilled to fall or spring wheat, to good advantage.

It would be superfluous to mention all the varieties of wheat, that would answer well the climate of Canada, so universally known to be a wheat growing country. There is one variety extensively cultivated in Scotland, named Fern spring wheat, which is highly spoken of both as regards its quality, produce, and early maturity; it would be very desirable to obtain some of this wheat, for next spring sowing. There is another kind of wheat named Fife wheat, lately from Scotland, also a spring wheat, which has been sown this year in many parts of the Province, it has produced well, grain large and plump, and not injured by rust or worm. Fall wheat of course, is the principal crop in western Canada, and every intelligent farmer will look for the best and cleanest seed; probably clean seed, and clean land is all that is required to accomplish this necessary object; to insure clean land to any great extent for fall wheat, summer fallows cannot be dispensed with, for no foul land can be thoroughly cleaned without it, the tillage of hoe crops in this country being too limited for any great breadth of preparation.

In preparing land for wheat, much advantage will be found in using the subsoil Plough, the subsoilers can be used during the summer fallowing to more advantage than at any other season; it must be left to the judgement of the farmer at which of the ploughings the subsoil plough is to be used. I have used it this season, in following the last furrow of the common plough before sowing the seed.

To insure clean crops care should be taken to select the seed clean and good, and of the best variety.

Washing the seed in strong pickle will be found very beneficial in swimming out the light seed, changing seed wheat from one township to another will also be found of much consequence both in improving the sample, and increasing the crop.

The Hon. Charles L. Irby, and James Nangles, two Commanders in the Royal Navy, mention in their Book of Travels, that, they saw in Egypt, a species of wheat named Heshbon wheat, with ears of an unusual size, one of them exceeding in dimensions, two of the ordinary sort, and on one stalk, it is a bearded wheat, with 84 grains in the ear, and more than double the weight of the common English wheat, it being as 103 to 42, length of straw 5 feet 1 inch, it has succeeded well in England, it will be worthy the attention of the curious enquirer to ascertain some further particulars relating to this remarkably fine sort of wheat. This wheat with other remarkably fine sorts might be procured and introduced to Canada, by the Professor of Agriculture, and a fair trial given it in the College Grounds at Toronto, from which result a superior article might become general in the fertile wheat growing regions of this Province.

No grain is as much the glory of the United States of America, as Indian Corn, and why it is not held in similar estimation in Canada, is, because its cultivation and management has hitherto been less perfectly understood by the Canadian farmer; this inferiority in its cultivation will not long exist, a large tillage of this nutritious grain is every year increasing, and it is now well known that both our soil and climate are well adapted to its culture; its value as an article of commerce is very great, to the Americans, and will no doubt become so here, when its cultivation shall more generally become one of the staple crops of the country.

The more its cultivation is extended, the better its culture will be understood, and with a complete knowledge of corn planting, a little care and management in our bright summer will bring the crop to perfection.

Its beauty as a plant is one great inducement for extending its cultivation in Canada. If the fields of corn tasselling out in the bright sunshine of August, and growing greener and stronger with the strength of the heat, were not almost a common place affair to the inhabitants

of this continent, they would be considered amongst the most beautiful sights in nature.

There are many varieties of this grain. The farmers of Canada are hereby invited to enter largely into planting it for exportation.

A great trade, in Indian Corn and Meal, has sprung up, in the United States of America. Since the Free Trade Act was passed the quantity sent to England and Ireland is immense, worth far more to the United States than the trade in wheat: for the privilege of sending their Indian Corn and Meal to Great Britain, the Americans ought in common justice, to permit the Canadian wheat and lumber into the United States duty free.

It is believed, upon the best information that can be obtained, that something over five hundred millions of bushels of Indian Corn, are annually grown in the United States of America, and a great part that was formerly in the western States trodden down and consumed in the fields by horned cattle and hogs, is now carefully harvested, and prepared for exportation. How much of the enormous quantity grown by the Americans is exported to Britain and British possessions, cannot be, by us, correctly ascertained, but it is supposed, it will amount to more than one third of the quantity above mentioned. Two millions of bushels at forty cents of their money, will give the growers $800,000, besides all the other advantages, of grinding, coopering, transporting, and shipping, amounting to a sum equal to that paid to the growers, accruing to the American Nation out of this trade.

It is not here intended to say one word against the American farmers for carrying this profitable article of export trade, as well as their wheat, and flour to the pitch it has gone, and it is still liable to be increased: but it will be difficult to define the reason that the American Government so pertinaciously continue to prohibit the Canada wheat and other articles from entering duty free into that country. Notwithstanding this restriction the American wheat is admitted into Canada free of charge.

This heavy duty on our produce entering the lake ports of the United States may be considered good policy by the American Government, but the people of Canada take a very different view of the subject.

We must now quickly take energetic measures in creating a better market for the product of our land thro' the noble river St. Lawrence, in establishing differential duties on merchandise imported from seaward, viz. Quebec and Montreal, thus diverting the trade up the river, the increased freight will enable the return vessels to lessen the expenses of the downward cargoes, thereby enabling our merchants at Montreal to pay higher prices for wheat and flour. Should this not accomplish the object, a further sacrifice must be made, in lessening the Canal Tolls and Port Duties; for a large River trade must be obtained forthwith.

More value is placed upon this reciprocity trade than it really merits, and, in time, if we encourage our own home manufactures and the trade on the River St. Lawrence, it will be hereafter proved that we shall do better without it, by saving the duty on Grain and other cultivated products. As for sawed lumber, at the rate we are going on, the trade with the United States will wear itself out, and before many years hence we in Western Canada will be obliged to keep the saw logs at home for our own use.

Therefore let us begin to depend more upon our own energies, in bringing forth the latent resources of the country, and give our hearty encouragement and assistance to the Board of Trade of Montreal, in obtaining a bounty from the Provincial Legislature for establishing Steam Vessels between England and the River St. Lawrence.

Emigrants and other persons will then be brought out quicker and cheaper, and our produce will also be conveyed across the Atlantic at less expense. For in this cheap transport of our products across the Atlantic, lies the whole secret of the disadvantage of the River trade against that of New York. And if we had Reciprocity to-morrow, the Americans being the older and wealthier country, and growing in every State bordering upon us the same articles Canada has to sell; we could not for some time to come be gainers by the intercourse.

Should the following, or other improving inventions, become successful, no human being can at present discover the alterations and effects, that may be produced upon the navigation of the world.

The new discovery which has just been made at Bordeaux, occupies at present the minds of all. By means of this ingenious invention, the pressure of a man's weight can put in motion a weight of about 425 lbs. placed at the extremity of a shaft about 40 inches in length. The swiftness is double that of the rotations of the Steam Engine, under comparative circumstances; but this swiftness may be increased at will, for it depends upon the pressure imparted so, also, with the force, which augments, in proportion to the length of the shaft and the weight placed at

its extremity. The machine in question has been inspected by a large number of scientific persons, all of whom have been surprized at the reality of this discovery. Steam, in consequence of this discovery, will be almost entirely dethroned, as a motive power. The weight of the Steam Engine with its accessories, its fuel and the space which they occupy, will be replaced by a weight equal to about the one tenth of a single boiler and occupying a space of 13 feet in length by six and a half in width, at the most, for machines of great power.

By establishing the River Trade in the way before mentioned, the Canadian Farmer will save the value of the expert duty on his produce, now paid to the United States, which may be computed as follows: say, that the whole of the surplus produce, of grain, grown annually in Canada, makes, in value, a sum equal to four and a half millions of bushels of wheat at 4s. per bushel £900,000, on this £20 per cent will give £180,000 per annum, thus, by directing the trade to the lower ports, and keeping the money so saved amongst us, would in addition to the carrying trade, give annually increasing employment to 4,000 families of mechanics and laborers, the reproduction of whose united labor would revive trade, and quickly make a visible alteration in the social condition of the country, and give us some encouragement as a nucleus in proceeding with our infant manufactures.

The political economists at home seem afraid of an over population, and place population against food, but, our position is quite the reverse, for we in Canada, may boldly offer food against population.

The powerful influence of manufactures in increasing the population and wealth of a country is too certain and obvious to admit of doubt. They not only afford direct subsistence, and the means of attaining to affluence to an immense number of individuals, but they act powerfully and beneficially on the agricultural and other classes; supplying them with an infinite variety of useful and necessary accommodations at a low price.

A flourishing agriculture, greatly depends, in fact, upon flourishing manufactures.

The effects of Rail Roads on the prosperity of a country will be numerous, and will, no doubt, quickly be the cause of a large tillage of land, and a variety of other improvements; but the Rail Road will not enable the farmer to grow one bushel of wheat more upon an acre, therefore we must keep up our industrious habits, and keep pace with the changes expected by these new modes of communication, and it should be remembered that the Rail Roads about to be constructed by the Government of Canada, will be done by capital borrowed for the occasion upon the credit of the Province; and as four-fifths of the inhabitants of this country will always be composed of the cultivators of the soil, the burden of paying interest on the Provincial debt will in that proportion fall upon the agriculturist, consequently great care must be taken in time to prevent any ruinous Rail Road scheme being undertaken. And none should be countenanced by the people except such as will facilitate the internal improvement of the country. Our credit at present is good, and no expensive scheme should be taken to injure it. On the other hand borrowing money for Railroads to run through our own country to the ocean, ports of Montreal and Quebec, or other proper internal improvements, will, by judicious management, prove in the end very advantageous in developing the vast latent resources of this great Province.

Notwithstanding the money being borrowed it may be asserted that the most productive power of man's hand, and of human wealth, particularly in a new country like ours, is a wholesome improving state of National credit. The power of credit upon our prosperity is greater than the steam engine itself, its effect (by strictly paying the interest on our Provincial debt and liabilities, with a fair aspect of liquidating the principal by a Sinking Fund,) can only be tested to advantage by the soundness of our Currency and Banking system; these with prudent management and honest economy, in every department of the government, will operate as a lever in advancing the social prosperity of our community by giving a wonderful stimulus to our Agricultural and Commercial industry.

DRAINING.

The question of draining our heavy lands is too important to remain without notice, on this occasion.

On arable land, all surplus water more than sufficient for the benefit of the growing crop, should have the means of escaping into drains by quick percolation. Moisture above the quantity required for vegetation, is injurious both to the soil and the crop. The soil becomes sodden and sour, and robbed of its fertility, and the roots stunted in growth for want of draining; no doubt but a superabundance of wet remaining on lands tilled to fall wheat, is often the cause of killing the crop, when the spring frost has been supposed to be the cause of the injury.

The best mode of draining practised in Great Britain, is with pipe or tile drains; but in our

present want of capital and skilful workmen, although decidedly the cheapest in the long run, is far too expensive at present.

The next sort of drain is made by opening the spongy, springy or swampy lands to the depth of four feet, placing two feet of stones broken to pass through a two inch ring, in the bottom, cover with a stone flag, or a sod with the turf downwards, returning the earth on the top; this for a main drain, with open ones made with the plough to empty into it, will dry low grounds sufficiently for carrying crops of grain, hay, or potatoes; in very low wet meadow, large open drains may answer, but without some sort of draining sweet hay or pasture cannot be expected.

Open drains of less dimensions are better than none, particularly head drains to prevent water in spring and fall, overflowing and remaining on and in the soil; thereby souring the land, and injuring the crops of grain or grass.

The value of manuring is nearly thrown away, unless the land be drained and well prepared to receive it. In many parts of the country some drains are constructed with hemlock poles laid lengthwise, two at the bottom and one over leaving a hollow below, putting the hemlock brush upon the poles, and tramping the earth back upon them; this sort of drain will last many years. Mr. Richmond, a skilful farmer near Gananoque, in the county of Leeds, has commenced draining his land with narrow boxes or tubes, of deal boards from four to six inches in the square, holes bored at intervals in the sides; such when covered over with two or three feet of earth will probably last a long time, and in the absence of stone is a good plan. Others in that neighbourhood are following his example upon a small scale.

To bring the draining of land to any thing like a state of perfection, it must be studied as a science. The work should be completed in a substantial methodical manner, under professed drainers and labourers employed in this essential work. It is to be hoped that our newly appointed Board of Agriculture will bring the subject of draining before Parliament, with a view to the enactment of a law for devising some means for the encouragement of draining the heavy lands of this Province. Meantime it would be worthy the attention of County and Township Agricultural Societies to promote more extensive draining by offering rewards or premiums to such farmers in their respective localities as shall perform a given quantity of draining in the most skilful manner.

There is a very curious and valuable article on draining, in the May number of the Agricultural Journal of Lower Canada, wherein the subject of draining is scientifically explained by Mr. Scott, at the Chippenham Farmer's Club, in Wiltshire, England. This document is well worthy the attention of farmers in Canada, who contemplate draining their land to any extent. Mr. Scott goes on to state that nearly one-fourth of the land in the United Kingdom requires draining, and that it would employ 100,000 men for 50 years, and require an outlay of £80,000,000 Stg. to accomplish the work. You will see how important it is to have its principles correctly understood, and its practice properly carried out. It is well established that drainage improves the climate as well as the soil; that it is equally conducive to the health of beasts as of man—that it gives us an earlier harvest, and it lengthens our summer by enabling us to turn cattle out earlier, and to keep them out later. Drainage also eradicates thistles and other weeds, and aquatic plants, cures and prevents rot in sheep and brings inert vegetable matter into action.

Draining the soil in Canada will have a wonderful effect in producing more abundant crops. Even without it, Heaven has, this summer blessed the farmer with a bountiful harvest throughout the length and breadth of the land, from the Bay of Chaleurs, on the Gulf of St. Lawrence to Sarnia Bay, on the confines of Lake Huron; embracing a line of country more than a thousand miles in length, consisting of every variety of soil. In the rich lands of Eastern Canada, stretching from the River St. Lawrence up to the magnificent Ottawa, crossing southward to the eastern townships, in all this space draining to an immense extent is no doubt required, and will, if skilfully performed, well repay the expense. In stretching away westward the same operations will produce similar benefits, even to the western limits of the Province; and when the lands shall become more cleared, and a larger extent prepared for cultivation, the draining spade will open in the rich loamy soils of the west, a mine of wealth to the agriculturist exceeding in certainty the gold digging mines of California.

The climate in the west is more mild, and when the flat lands in the vicinity of the Grand River, the Thames, and the Sydenham Rivers up to the beautiful St. Clair, shall become more densely settled and those parts druined that require it, with the great Western Railroad now preparing from Hamilton to Windsor, with a branch from Port Sarnia to the town of London, the industrious husbandman will be enabled

to cultivate his fields with pleasure, profit and delight.

In older settled parts of the country where the land has been long cleared and extensively cultivated, superior kinds of ploughs and ploughing matches should be encouraged, and skilful ploughmen liberally rewarded; for good ploughing is a primary consideration with every intelligent husbandman. Hitherto ploughing matches have not, but in few instances, been carried on upon any satisfactory system, and those that have come off at our Annual Industrial Exhibitions, have been in a great measure total failures. When the Exhibitions are being held in the month of September, the land is generally so parched and dry, it is difficult for any sort of plough to enter it, much more to turn out any satisfactory work, therefore, it will be best to discontinue the ploughing matches at the time of the Exhibitions, and merely select suitable ground for the purpose of making trial of the different kinds of common ploughs and subsoil ploughs exhibited for premiums, and no plough should be awarded a prize without being fairly tested in the presence of the judges and others, somewhere in the vicinity of the Exhibition; this would give sufficient ploughing on that occasion.

Ploughing matches are of sufficient importance for demanding a better opportunity in contesting for prizes, by first, second, third and fourth classes, of skilful and perfect ploughmen. This can only be done when the ground is in a fit condition for performing the work in a proper manner, consequently, to have a proper ploughing match, a day should be set apart, in every locality for that purpose; such as County ploughing matches, or one county against another; or what would be still more beneficial and convenient, one with another, with no other attraction during the days of trial.

At the Industrial Exhibition of Eastern Canada, held at Montreal, in October, 1850, a great display of the products of the land, elegant ladies' work and fine arts, together with many other varieties of curious home manufactured articles and mechanical ingenuity were brought forward, far beyond the expectation of strangers, and probably far beyond the expectations of the inhabitants themselves; clearly demonstrating that frequent exhibitions of the kind in Eastern Canada would quickly develop the energies of the inhabitants and the resources of that vast portion of the country; and it is to be regretted that no advertisements have yet appeared for holding an Industrial Show at Montreal or some other city in Lower Canada, in the present year. The intercourse of strangers has always a good effect in disseminating useful knowledge, and exchanging opinions on every art and improvement.

The Americans from Boston and other parts who visited Montreal on that occasion, returned highly delighted; and persons from distant parts of Western Canada were highly pleased, both with the articles brought forward at the Exhibition, as well as with the polite and hospitable conduct of the Mayor and citizens of Montreal and the inhabitants of the surrounding country; however none but cities of some magnitude can in Canada attempt to give entertainments and amusements on anything like so large a scale. The American people, from their larger country and greater population, are at present far ahead of us in that respect.

During the New York State Fair, which came off in the city of Rochester, last week, it was supposed that above one hundred thousand persons from various distant parts were assembled on the occasion. It lasted four days of delightful weather, and the Show Ground enclosing an area of twenty-three acres, exhibited one continual scene of novelty, curiosity and profusion, without any great discomfort to so large a concourse of people; and the agriculturists from Canada, who visited Rochester on that occasion, had reason to be well pleased with the civility and hospitality of the Mayor and citizens of Rochester, and also with the urbanity and attention of the President of the Agricultural Society, and the office-bearers of that State Institution.

The stock and other articles from Canada were much prized by the Americans, and several sales thereof were made; ready accommodation being also provided within the Show Grounds for it. I know that the people of Canada will bear in mind such acts of civility and friendly intercourse, and endeavour to the best of their ability and limited means, to reciprocate such like courtesies whenever opportunities shall offer, thereby adding to the credit of the farming community of both countries, without in the least degree lessening the nationality of either.

GEO. BENNETT MARKS,
President.

Brockville, Sept. 26, 1851.

THE PROVINCIAL EXHIBITION.

THE FLORAL HALL.

This formed the greatest point of attraction, and was indeed well worthy of the universal attention and admiration which was bestowed upon it. It consisted of a large tent furnished by Mr. Williams of Rochester, N. Y., in the centre of which

stood the Floral Temple, a structure gaily decorated with evergreens and flowers, and surmounted by a beautiful floral cupola. Around the base of the temple were 3 or 4 tiers of steps upon which were arrayed some beautiful pictures, also some large and delicious looking peaches from Montreal. From the cupola were suspended a dozen large bunches of grapes, black and white alternately, which had quite a rich and beautiful appearance, one of the black bunches, called, we believe, black Hamburgh, weighed 3lbs. 6oz., an extraordinary size for this species of fruit. These were also from Montreal, and we heard it generally remarked, that the fruit from that district could not be surpassed. There were some beautiful pears and other kinds of fruit from Rochester, and the large fine specimens from Messrs. Jones and Grant's Gardens, also proved that we can grow fruit here to great perfection, and the display made by Mr. Jones, and also by Mr. Beatty of this county, served, in no small degree to support the credit of Brockville and its neighbourhood. Mr. Ellingham, near this town, shewed a large branch of a native vine called the Connecticut grape, literally loaded with fruit, but which requires the frost to render it at all palatable. Around the inside promenades were arranged a double row of shelves, on one side of which were shewn the fruit and vegetables, and on the other numerous pictures and other specimens of the fine arts, and over this again were suspended the shawls, ladies work, cabinet work, and innumerable specimens of domestic manufacture.

An equestrian portrait of the world renowned Kossuth, in full military costume, most beautifully executed, in a new species of mosaic work, by Dr. Naphegyia, the Lord's Prayer in twenty different languages in coloured letters by the same gentleman, a beautiful specimen of penmanship —a fine portrait of a lady and child in coloured crayon, drawing, by Miss Morris of Brockville, which was well worthy of the first prize which it received, a collection of various portraits by Miss Jones of this town, but which we thought too highly coloured, but well executed in other respects—a collection of valuable and beautiful portraits, &c., by Mr. Hoppner Meyer, which denotes no mean artist—a splendid view of Fort Snelling at the head navigable waters of the Mississippi, being one of the scenes taken from the Panorama of the Upper Mississippi.

We would make particular mention of the beautiful and spirited oil paintings by Paul Kane representing the Indians and scenery of the far West; No. 1, shewing the mode of travelling in these distant regions in sleighs drawn by dogs (this picture represents a party in the depth of winter, of which Mr. Kane, whom we met on the ground, informed us he was a member;) No. 2, Blood Indian Horse racing; No. 3, Portrait of Maungwadaus, an Ojibeway chief. This we considered one of the greatest gems in the Floral Hall; No. 4, View of Red River settlement; No. 5, The frightful scalp dance; No. 6, A Blackfoot Indian Pipestem carrier. These are only a few of Mr. Kane's large collection of Indian paintings, to finish which our government, with enlightened liberality, lately voted £500. It is to be hoped that Canada may at some future day possess the entire collection of this great artist, which must be of the greatest importance in a national point point of view, as well as be the means of preserving memorials of these interesting tribes when they have entirely disappeared before the face of the white man. Mr. Carpendale, the young artist from Toronto, exhibited some of his beautiful drawings in chalk; No. 1, the head of a dog; No. 2, the head of a Lion as large as life, a most beautiful and truthful plate, and perhaps the best of the whole; No. 3, Lion prowling at twilight; No. 4, Lion's morn or Sunrise, Wild Deer swimming the river in the distance, a fine piece; No. 5, Lion roaring at midnight; No. 6, Domestic animals taking shelter from a storm, considered by many the best of his productions. These excited great admiration, and we are proud to have such an artist as Mr. Carpendale amongst us, and we hope he will be encouraged to prosecute his interesting works. The twilight, the cold morning light, and the gloom of midnight, were faithfully and beautifully executed. Miss Church of Cobourg, and Miss Post of Picton, shewed some good oil paints. There were a fine collection of specimens in dentistry from Mr. Blodgett of Ogdensburg and Mr. Alcock of New York; also imitation Black Walnut Picture frame and a Grained mantel-piece from Mr. Gilpin of Brockville, much admired, as also several specimens from Messrs. White, Brockville.

Among the many articles of art exhibited, we must not omit to mention a landscape in oil, painted by our indefatigable townsman Mr. John Goodall. Humble talent is often overlooked in such a collection as was contained in the hall; we however, will not keep Mr. Goodall's merits concealed from the public. There were innumerable speciments of ladies work, such as fancy netting, crocket work, quilts, shawls, &c. which our ignorance of such matters precludes us from speaking more particularly of, we therefore beg to refer those interested in these things to the prize list which we publish. There were samples of Gunpowder from the Gore Powder Mills, near Hamilton, sent by Messrs. Belhouse, Ireland & Co. of Hamilton, Agents for the manufacturers. This is a novel article of manufacture in Canada, and it speaks much for the enterprise of our people when we state that powder was turned out of the Gore powder mills in June last, on the spot where, in the spring, the axe of the lumberman was used to clear away the timber. The samples were of first rate quality. and we are glad to learn the powder is extensively used on the Great Western Railway. The Mills are owned by Messrs. Charles Kelly & Co., of Hamilton, and will speedily be able to turn out 100 kegs a day.

Mr. Paterson of Dundas showed a pair of his fine blankets, similar to those lately sold to Her Majesty, and which were certainly by far the finest we ever saw,

STOCK.

The cattle, pigs, and sheep pens were ranged around the ground, in which a few excellent animals were contained, but for the particular distinctive qualities of this department we refer our readers to the prize list.

There seems to be much difference of opinion as to the show of stock, some thinking it good, others mediocre, and some again beneath the average of former years. When so much difference of opinion exists amongst judges, it would be of course, out of the way for us to venture an opinion, but all seem to be agreed that the show of horses, at any rate, was the best that has been seen in the province. Among the horses shown was a very fine pair belong to Robert Gordon, Esq., of Paris. These horses, we understand, were sold to a gentlemen belonging to Quebec for a pretty high sum.

THE PLOUGHING MATCH.

The Ploughing commenced about 10 o'clock on Friday morning. It took place on a field belonging to H. Freeland, Esq., on the Maitland road,—13 ploughs starting.

After having marked the several ridges, and plowed a few furrows up and down the field, it became evident that it would be very late in the day before each ploughman could finish the two ridges allotted to him, on account of the length of the field; accordingly, a furrow was drawn across the middle, and only the half length of the field ploughed.

The work was done in good style considering the dryness of the soil, of which all the plougmen complained.

About 4 o'clock the work was finished, when the Judges came upon the ground, and after an hour's patient examination of the work, awarded James Thomson, from Bytown, who wrought with an iron plough, the 1st prize; William Young, son of Robert Young, from Ramsay, who wrought with an iron plough, the 2nd prize; William Young, son of Peter Young, from Ramsay, who wrought with an iron plough, the 3rd prize; Henry Paterson, from Elizabethtown, who wrought with a wooden plough, the 4th prize.

Annual Meeting.

The annual meeting of the Directors of the Agricultural Association took place in the Committee room on the show grounds on Friday the 26th Sept. J. B. Marks, Esq., President, in the chair. Present T. C. Street and William Matthie, Vice Presidents; R. L. Denison, Treasurer; Hon. Adam Fergusson, E. W. Thomson and Sheriff Ruttan Ex-Presidents; with the following representatives of County Societies. John Stiles, Middlesex; J. L. Green, Norfolk; W. McMicking Welland and Lincoln; P. Fisher, Wentworth and Halton; E. W. Thomson, York; Dr. Pass, Simcoe; Matthew Jonas, Durham; J. Rogers, Northumberland; B. F. Davy, Hastings; J. W. Hough, Leeds; Hon. James Wylie; —— Stewart, Carleton; J. W. Rose, Dundas; W. Colquhoun, Stormont; Sheriff Treadwell, Prescott; A. Petre, Russell.

The following gentlemen were elected officers for the ensuing year. Thomas Clarke Street, Niagara Falls, President; Willliam Matthie, Brockville, 1st Vice President; Sheriff Treadwell, L'Original, 2nd Vice President. R. L. Denison, Toronto, Treasurer.

The following Resolutions were also proposed and carried.

1. That the next Exhibition of this Association be held at Toronto; the time to be subsequently determined by the Board of Agriculture.

2. That the most cordial thanks of this Association are due and are hereby given to our esteemed and venerable President, J. B. Marks Esq. for his valuable and zealous services, and for his excellent address delivered yesterday; and that Mr. Marks be requested to furnish a copy thereof to the *Canadian Agriculturist* for publication.

3. That Dr. Gabor Naphegyi is entitled to the thanks of this Association for the spirited manner in which he has introduced among the Farmers of this young and rising country a new field of profitable enterprise in the culture of the Sugar Beet; and for the scientific and satisfactory information which he gave before the public in the Court House; and in order to show the appreciation of his labors by the Directors, they hereby present him with the special Diploma of honor and merit of this Association.

5. That the thanks of this Association be given to R. L. Denison Esq.; and that he be requested to act as Treasurer for the ensuing year; and the Bank of Upper Canada, continue the Bank of Deposit

5. That the thanks of this Association be communicated to the Senate of the University of Toronto, for having taken steps for filling the Chair of Agriculture in that important Institution; and likewise for the liberal terms on which they have offered to place a portion of the Park grounds at the disposal of the Board of Agriculture, for the purposes of an Experimental Farm.

6. That our respected Secretary, Mr. Buckland, be strongly recommended as a fit and proper person, in all respects, to fill the Chair of Agriculture in the University.

7. That the thanks of this meeting be given to George Crawford, Esq., and the other gentlemen constituting the Local Committee at Brockville, for the efficient manner in which they have sustained the character and operations of the Association.

8. That the thanks of this Association be given to the Mayor and Corporation of Brockville; to the Warden and County Council, and the various Agricultural Societies for the liberal pecuniary support they have rendered in the carrying out the patriotic objects of the Society.

9. That the grateful acknowledgements of this meeting be given to the Ladies of Brockville, and elsewhere, for the satisfactory manner in which they have sustained their interesting and attractive department of the Exhibition.

10. That the thanks of this meeting be given to C. E. Jones, Esq., for the handsome and patriotic manner in which he placed at the disposal of the Association the convenient and beautiful grounds upon which their present Exhibition has been held.

11. That the thanks of this meeting be given to the Canada Company for the continuation of their annual subscription of £25, as a premium for the best 25

bushels of winter wheat; an act of discriminating liberality, that has already been productive of the happiest results, in demonstrating to the world the peculiar adaptation of the soil and climate of Upper Canada to the production of the "staff of life;" and also for the still further aid offered by the Company towards encouraging the growth and preparation of those important articles—Flax and Hemp.

12. That the thanks of the Association be given to the Baron de Longueuil, for the handsome and appropriate present of a Chondrometer, or seed gauger, for the use of the Society.

13. That a gold medal of the value of five pounds be awarded to the author of the Essay read last evening before the Association, in the Court House, marked No. 4.

14. That it is the opinion of this meeting, that the present mode of appointing Judges is inconvenient and somewhat objectionable, and that the Board of Agriculture be recommended to take the subject into consideration with a view to the adoption of some improved system.

15. That the Board of Agriculture be recommended to purchase Tents for the use of the Association, if upon further consideration it be deemed expedient.

PRIZE LIST.

HORNED CATTLE.

CLASS A,—DURHAMS.

JUDGES.—BULLS,—J. Boyes, Amherst Island A. Kempton, Montreal; H. Parsons, Guelph. Cows,—S. P. Chapman, Clokville, N. Y.; John Thompson, Bytown; Wm. McMicking, Queenston.

Best Bull.

1. Ralph Wade, Sen., Durham, £7 10s.; 2. G. Miller, Markham, York, £4; 3. W. Fergusson, Frontenac, £2.

Best 3 years old Bull.

1. Dr. Richmond, Leeds, £6; 2. J. Gilbert, Hastings, £3 10s.

Best 2 Years old Bull.

1 E. H. Hawke, Toronto, £5; 2 R. Wade, Jun., Cobourg, £3; 3 T. Welbanks, Picton, £1 10s.

Best 1 Year old Bull.

1 M. Jonas, Durham, £4.

Best Bull Calf of 1851.

1 W. Fergusson, Pittsburg, Frontenac, £2 10s.; 2 do., £1 10s.; 3 R. Wade, Jun., Cobourg, £1.

Best Cow.

1 R. Wade, sr., Cobourg, £5; 2 John Wade, Durham, £3; 3 W. Fergusson, Pittsburg, Frontenac, £2.

Best 3 Year old Cow.

1 W. Fergusson, Pittsburg, Frontenac, £4; 2 R. Wade, Jun., Cobourg, £2 10s.

Best 2 Year old Heifer.

1 R. Wade, Jun., Cobourg, £3; 2 C. Jones, Brockville, Leeds, £2.

Best 1 Year old Heifer,

1 R. Wade, Jur., Cobourg, £2 10s.; 2 R. Wade, Jun., do., £1 10s.

Best Heifer Calf of 1851.

1 W. Fergusson, Frontenac, £1 10s.; 2 R. Wade, Jun., Cobourg, 15s.; 3 J. Wade, Durham, 10s.

CLASS B,—DEVONS.

JUDGES—A. Cuttanach, Glengary; H. Johnson, Ottawa; W. Thomson, Carleton.

Best Bull.

1 J. Masson, Cobourg, £7 10s.: 2 J. B. Ewart, Dundas, £4.

Best 2 Year old Bull.

1 F. Wright, Augusta, Grenville, £5.

Best Bull Calf of 1851.

1 J. Masson, Cobourg, £2 10s.; 2 A. A. Burnham Cobourg, £1 10s.

Best Cow.

1 J. B. Ewart, Dundas, £4; 2 J. Masson, Cobourg, £2 10s.

Best 1 Year old Heifer.

1 J Masson, Cobourg, £2 10s.; 2 do., £1 10s.

Best Heifer Calf of 1851.

1 J. Masson, Cobourg, £1 10s.; 2 J. W. Rose, Williamsburg, Dundas 15s.

CLASS D,—AYRSHIRES.

JUDGES—The same as on Devons.

Best Bull.

1 Baron de Longueuil, Kingston, £7 10s.; 2 J. B. Ewart, Dundas, £4 · 3 J. W. Hough, Leeds, £2.

Bull Calf of 1851.

1 John Boyes, Amherst Island, Frontenac, £2 10s; 2 Baron de Longueuil, Kingston, £1 10s.; 3 do., do., £1

Best Cow.

1 J. B. Ewart, Dundas, £4; 2 J. W. Hough, Leeds, £2 10s.; 3 Baron de Longueuil, Kingston, £1 10s.

2 year old Heifer.

1 J. B. Ewart, Dundas, £3; 2 John Boyes, Amherst, Island, £2; 3 J. B. Ewart, Dundas, £1.

1 year old Heifer.

1 J. W. Hough, Leeds, £2 10s.; 2 J. W. Rose, Williamsburgh, Dundas, £1 10s.; 3 J. B. Ewart, Dundas, £1.

Heifer Calf of 1851.

1 O. Jones, Brockville, £1 10s.

CLASS E,—GRADE CATTLE.

JUDGES—W. F. Weese, Prince Edward; C. Gilbert; H. Munro.

Best Cow.

1 John Flanagan, Kingston, £4: 2 J. L. McDonald, Leeds, £2 10s.; 3 Albert Pearson, Grenville £1 10s.

3 year old Cow.

1 Wm. Bishop, Niagara, £3 5s.; 2 R. P Colton, Brockville, £2 5s.; 3 R. Watson, do., £1 5s.

2 year old Heifer.

1 M. Jonas, Durham, £3; 2 John Boyes, Amherst Island, £2; 3 Rev J. A Allen, Wolf Island, £1.

1 year old Heifer.

1 J. W. Rose, Williamsburg, Dundas, £2 10s.; 2 John Gilbert, Hastings, £1 10s.; 3 J. L. Schofield, Brockville £1.

Heifer Calf of 1851.

1 John Gilbert, Hastings, £1 10s.; 2 Rev. J. A. Allen, Wolf Island, 15s.; 3 John Flanagan, Kingston, 10s.

FAT CATTLE—ANY CLASS.

Ox or Steer.

John Dugdale, Niagara, £3: 2 Wm. Bishop, Niagara, £2; do. do., £1.

Best Cow.

Charles Jones, Brockville, £ 1.

Best Yoke of Working Oxen.

1 John Gilbert, Hastings, £3; 2 John Thompson, Carleton, £2; 3 J. A Throop, Grenville, £1.

CLASS F.—HORSES.

JUDGES.—Oliver Blake, Norfolk; J. W. Rose, Williamsburgh; A. Alcorn, Cobourg.

Stallion for Agricultural purposes.

1 John Clarke, Carleton, £7 10s; 2 E. H. Hawke, Toronto, £5; 3 Duncan Fergusson, Lanark, £2 10s.

Heavy Draught Stallion.

1 Jane Ward, Markham, £7 10s; 2 Thomas Nathess, Durham, £5; 3 John Masson, Cobourg, £2 10s.

3 *Year Old Stallion.*

1 John Robb, Toronto, £5; 2 J. & W. Crawford, Scarborough, £3; 3 John Louks, Smith's Falls, £1.

2 *Year Old Stallion.*

1 W. Miller, Pickering, £3; 2 J. Masson, Cobourg, £2.

2 *Year Old Gelding or Filley.*

1 W. Thompson, Carlton, £3; 2 D. Tait, Cornwall £2; 3 S. Mathie, Lanark, £1.

Span Matched Carriage Horses.

G. Crawford, Brockville, £4; 2 R. Gordon, Paris, £3; 3 D. B. O. Ford, Brockville, £1.

Span Draught Horses.

1 James Row, Leeds, £4; 2 Q. Smith, Leeds, £3; 3 G. Wing, S. Crosby, £1.

Brood Mare and Foal.

1 M. Jonas, Durham, £5; 2 A. Lawyer, Dundas, £3; 3 D. Tait, Cornwall, £1.

Saddle Horse.

1 G. Mink, Kingston, £2 10s; 2 do do, £1 10s.

CLASS G.

JUDGES.—J. Nesbit, Bytown; J. Anderson, Halton; Dr. Pass, Simcoe.

Thorough-bred Stallion.

1 James Mitchell, Toronto, £5; 2 G. Cooper, Toronto, £3; 3 J. W. Ritchey, Simcoe, £1.

Thorough-bred Stallion, 3 Years Old.

1 W. Byres, Carlton, £5; 2 J. Crawford, Leeds, £3.

Thorough-bred Mare and Foal.

1 W. Byres, Carlton, £5; 2 P. Davy, Bath, £3.

CLASS H.—SHEEP.

JUDGES.—J. Williams, Queenston; P. Davy, Lennox and Addington; W. Beattie, Middlesex.

LEICESTERS.

Ram, 2 shears and over.

1 W. Miller, Pickering, £4; 2 A. Alcorn, Cobourg, £2; 3 T. Scott, Amherst Island, £1.

Shearling Ram.

1 W. Miller, Pickering, £2 10s; 2 do do, £1 10s; 3 do do, 15s.

Ram Lamb.

1 T. Scott, Amherst Island, £2; 2 M. Jonas, Darlington, £1; 3 do do, 10s.

Two Ewes, two shears and over.

1 W. Miller, Pickering, £4; 2 do do, £3; 3 R. Wade, Jr., Cobourg, £1 10s.

2 *Shearling Ewes.*

1 W. Miller, Pickering, £3; 2 do do, £2; 3 John Boyes, Amherst Island, £1.

Two Ewe Lambs.

1 G. Miller, Markham, £1 10s; 2 M. Jonas, Darlington, £1; 3 W. Miller, Pickering, 10s.

SOUTH DOWNS.

Ram, 2 Shears and Over.

1. J. Spencer, Whitby, £4.

Shearling Ram.

1. J. Spencer, Whitby, £2 10s.; 2. J. Spencer, Whitby, £1 10s.

Ram Lamb.

1 J. Spencer, Whitby, £2.

2 *Ewes, 2 Shears and Over.*

1. J. Spencer, Whitby, £4.

MERINOS OR SAXONS.

Ram, 2 Shears.

1. D. G. Boyce, Leeds, £4; 2. A. Hurd, Grenville, £2; 3. S. Barnhart, Leeds, £1.

Ram Lamb.

1. J. Langstaff, York, £2.

2 *Ewes, 2 Shears.*

1. D. G. Boyce, Leeds, £4; 2. A. Hurd, Greenville, £2.

FAT SHEEP.

2 *Fat Wethers.*

1. R. Wade, jr., Cobourg, £3; 2. R. Wade, jr., Cobourg, £2.

2 *Fat Ewes.*

1. R. Wade, jr., Cobourg, £3; 2. W. Miller, Pickering, £2; 3. R. Wade, jr., Cobourg, £1.

CLASS I.—PIGS.

JUDGES—T. Stiles, London; M. Jonas, Durham; A. A. Burnham, Northumberland.

Boar, 1 year.

1. J. McKinley, Trafalgar, £3; 2. D. Smith, Halton, £2; 3. Rev. J. A. Allen, Wolf Island, £1.

Breeding Sow, 1 year and over.

1. G. McKinley, Trafalgar, £3; 2. J. Gilbert, Hastings, £2; 3. J. W. Parmentier, Gananoque, £1.

Boar of 1851.

1. C. Hinds, Northumberland, £2; 2. J. Boyes, Amherst Island, £21 10s.; 3. N. Fennell, Leeds, £1.

Sow of 1851.

1. G. McKinley, £2; 2. J. W. Parmentier, £1 10s; 3. C. Hinds, Northumberland, £1.

CLASS J.—AGRICULTUAL IMPLEMENTS.

JUDGES — J. L. Green, Norfolk; J. Duncan, Lanark; A. Yaomans, Hastings; S. Parker, Lincoln.

Wooden Plough.

1 E. and J. McTavish, Durham, £2; 2 C. Lemon, Grenville, £1 10s; 3 S. Hulburt, Prescott, £1.

Iron Plough.

1 J. McSherry, Lincoln, £2; 2 E. and D. McTavish, Darlington, £1 10s; 3 S. Hulburt, Prescott, £1.

Subsoil Plough.

P. D. Booth, Addington, £2; 2 P. D. Booth, Addington, £1 10s.

Pair of Harrows.

1 C. Jones, B ockville, £1; 2 Mitchell & Strander, Gananoque, 15s.

Fanning Mill.

W. McKenzie, Williamsburgh Dundas £1 10s; 2 R. Kellock, Perth, £1; 3 Louis Houck, Markham, 10s.

Horse Power Trasher and Separator.

1 R. P. Colton, Brockville, £2.

Grain Drill.

1 Edward Perry, Brockville, £3.

Straw Cutter.

1 S. H. Wright, Oshawa, £1; 2 C. Grant, Elizabethtown, 15s.

Smut Machine.

1 R. P. Colton, Brockville, £1 10s.

Corn and Cob Crusher.

1 Jas. Selleck, Greenville, 15s.

Two-Horse Waggon.

1 J. Carron, Brockville, £3.

Horse Rake.

1 James Fell, Augusta, £1; 2 Mitchell & Stranders, Gananoque, 15s; 3 W. Niblock, Leeds, 10s.

Wooden Roller.

1 C. Jones, Brockville, £1 5s.

Reaping Machine.

1 J. Helm, Port Hope, £5.

Potato Digger.

1 C. Jones, Leeds, 15s; 2 W. J. Weese, Prince Edward, 10s.

Cultivator.

1 C. Bott, Leeds, £1 10s; 2 J. Hulburt, Prescott, £1.

Set of Horse Shoes.

1. E. Chalmers, Leeds, 15s; 2 E. Wilmot, Kingston, 10s; 3 David Black, Brockville, 5s.

Hay Rakes.

1 Mitchell & Strander, Gananoque, 10s; 2 R. Brough, Gananoque, 7s; 3 do do, 5s.

Narrow Axes.

1 H. H. Date, Galt, 15s; 2 T. Armstrong, Lennox, 10s; 3 Collins & Drew, Smith's Falls, 5s;

Manure Forks.

1 Skinner & McCulloch, Brockville, 15s; 2 do do 10s; 3 do do 5s.

Hay Forks.

1 Skinner & McCulloch, 15s; 2 do do 10s; 3 do do 5s.

Scythe Snaiths.

Skinner & McCulloch, 15s; 2 do do 10s.

Grain Cradle.

1 W. Bordon, Leeds, 10s; 2 J. Davidson, Belleville, 5s.

Iron Shovels.

1 Skinner & McCulloch, Brockville, 15s; 2 do do 10s; 3 do do 5s.

CLASS K. DOMESTIC MANUFACTURES.

JUDGES—W. Wallace, Lanark; N. Ford, Norfolk; W. Colquhon, Cornwall.

One-Horse Pleasure Carriage.

1 G. Smith, Grantham, £2; 2 A. Turner, Brockville, £1 10s; 3 J. W. Rose, Dundas, 10s.

Two-Horse Pleasure Carriage.

3 J. Delanaye, Belleville, 15s.

Farm Harness.

1 S. Stevens, Belleville, £1 10s; 2 T. McCaffy, Perth, £1.

Saddle and Bridle.

1 S. Stevens, Belleville, £1; 2 do do 15s.

Travelling Trunk.

1 T L Haight, Kingston, 1 10s; 2 do do 10s.

Sole Leather.

1 P McKay, Dundas, £1 10s; 2 do do 15s; 2 R. Coleman & Co., Leeds, 5s.

Upper Leather.

1 P McKay, Dundas, 15s; 2 do do 10s; 3 A C Bott, Leeds, 5s.

Skirting Leather.

1 P McKay, Dundas, 15s.

Calf Skin, Dressed.

1 A C Bott, Leeds, 15s; 2 P McKay, Leeds 10s; 3 do do 5s.

Harness Leather.

1 P McKay, Leeds, 15s; 2 do do 10s; 3 A. Wright, Grenville, 5s.

Fur Hat.

1 T C Dixon, London, 15s.

Fur Sleigh Robe.

1 T C Dixon, London, 15s; 2 John Gescoe, Kitley, 10s.

Bootmaker's Work.

1 J C Potter, Brockville, 15s; 2 J. Dillon, Kingston, 10s; 3 J C Potter, Brockville, 5s.

CLASS L. WOOLLEN AND FLAX GOODS.

JUDGES—J. P. Roblin, Prince Edward; J. Rosamond, Carleton Place; J. Shaw.

Woollen Carpet.

1 R Shipman, Leeds, £2; 2 M Schneider, Leeds £1; 3 R. Sheppard, Leeds, 10s.

Oil Cloth.

1 J Boese, Montreal, (dis.,) £1.

Woollen Blankets.

1 Mr Patterson, Dundas, £2; 2 P. Davy, Lennox, £1; 3 Messrs. McDougal, Perth, 10s.

Counterpane.

1 J B McClean, Leeds, £1; 2 do, 15s; 3 S. Moray, Augusta, 10s.

Flannel.

1 W. Wood, Cornwall, £1; 2 A Fox, Leeds, 15s.

Satinett.

1 J Rosamond, Renfrew, £1; 2 J Brown, Hastings, 15s.

Flannel, not Factory.

1 Miss R Gill, Leeds, 15s; 2 J Gilbert, Hastings, 10s; 3 W. Wood, Cornwall, 5s.

Fulled Cloth, not Factory.

3 Thomas Pervis, Leeds, 5s.

Shawls, not Factory.

1 N Shipman, Leeds, 15s; 2 J. Shipman, do, 10s; 3 Miss Gill, Leeds, 5s.

Linen Goods.

1 W. Beatty, Leeds, 15s; 2 J Moray, Augusta, 10s; 3 Miss Gill, Leeds, 5s.

Flax or Hemp Cordage.

J McGregor, Toronto, 15s; 2 T Carson, Cobourg, 10s.

Flax.

2 P Davy, Bath, £1.

Linen Bags.

1 F Smith, Leeds, £1; 2 D Campbell, Glengary, 15s; 3 W Beatty, Leeds, 10s.

CLASS M.—DAIRY PRODUCTS AND SUGAR.

JUDGES—A. Wallace, Simcoe; P. Roblin, Prince Edward; J. Gilbert, Hastings.

Firkin of Butter above 50lbs.

1 J Parish, Leeds £2 10s; 2 P Schneider, Grenville, £1 10s; 3 D Phillips, Leeds, £1.

Cheese, not less than 30lbs.

1 C. Gardner, Leeds, £2; 2 J Arnold, Leeds, £1 10s; 3 J. W. Hough, do, £1.

2 Stilton Cheese not less than 14lbs.

1 R Wade, jr., Cobourg, £2 10s; 2 do, £1 10s; 3 H. Parsons, Guelph, £1.

(The awards for Stilton Cheese being disputed, they are yet undecided.)

Butter not less than 20lbs.

1 C Gardner, Leeds, £1 10s; 2 J Parish do £1; 3 W F Weese, Prince Edward, 10s.

Maple Sugar.

1 G. Macnish, Leeds, £1; 2 E Shipman, Leeds, 10s; 3 W F Weese, Prince Edward, 5s.

Beet Root Sugar.

1 Dr. Naphgeyi, Paris, £1; 2 do 10s.

CLASS N.—CABINET WARE, &c.

JUDGES—O. R. Gowan, Brockville; H. J. Ruttan, Cobourg; W. Fergusson, Kingston.

Veneers from Canadian Wood.

2 J. N. W. White, Brockville, 15s.

Sawed Pine.

S Hulburt, Prescott, 10s.

Butternut.

W F. Weese, Prince Edward, 10s.

Graining Wood.

N T McCaulay, £1 10s.

Sofa.

J McEllenny, Brockville, £3.

6 Drawing Room Chairs.

J McEllenny, Brockville, £1 15s.

Collection of Canadian Minerals, named.

Dr Reynolds, Brockville, Diploma and £1 10s.

CLASS O.—AGRICULTURAL PRODUCTIONS.

JUDGES—D. McLellan, G. Cunningham, W. W. Waddell.

The Canada Company's Prize of £25.

For the best 25 bushels of *Fall Wheat*, the produce of Canada West, being the growth of 1851. The prize to be awarded to the actual *grower* only of the Wheat, which is to be given up to, and become the property of, this Association, for distribution to the County Societies for seed:

1. Isaac Anderson, West Flamboro,...	£25	0	0
2. J. W. D. Moodie, Belleville,.....	10	0	0
3. Isaac Anderson, West Flamboro',..	5	0	0

The winners of the 2nd and 3rd premiums retain the wheat.

2 Bushels Winter Wheat.

1. W. W. Waddel, Wentworth, £2 10s.; 2. P. Roblin, Prince Edward, £1 15s.: 3. Joseph Wright Grenville, £1 5s.

Spring Wheat.

1. W. F. Weese, Prince Edward, £2 10s; 2. S. Manhart, Leeds, £1 15s; 3. W. F. Weese, Prince Edward, £1 5s.

Barley.

1. Patrick Wright, Cobourg, £1 10s; 2. A. Shaw, Toronto, £1; 3. W. F. Weese, Prince Edward, 10s.

Rye.

1. A. Shaw, Toronto, £1 10s; 2. I. Anderson, Halton, £1; 3. do do 10s.

Oats.

1. I. Anderson, Halton, £1 10s; 2. A. Alcorn, Cobourg, £1; 3. John Beatty, Leeds, 10s.

Peas.

1. G. Gardner, Leeds, £1 10s; 2. E. Shipman, Leeds, £1; 3. W. F. Weese, Prince Edward, 10s.

Marrowfat Peas.

1. J. Gilbert Hastings, £1 10s; 2. W. F. Weese,

Prince Edward, £1; 3. P. Roblin, Prince Edward, 10s.

Indian Corn.

1. W. F. Weese, Prince Edward, £1 10s; 2. B. Simpson, Prince Edward, £1; 3. H. Platt, Prince Edward, 10s.

Timothy Seed.

1. Robert Younge, Ramsay, £1 5s; 2. S. Weagent, Dundas, 15s; 3. A. Shaw, Toronto, 10s.

Flax Seed.

1. W. Brown, Halton, £2; 2. A. Shaw, York, £1 5s; 3. W. Beatty, Leeds, 10s.

Sweedish Turnip Seed, not less than 10 lbs.

1. Wm. McGee, Lanark, 15s; 2. John Tomlinson, Ramsay, 10s; 3. R. Wade, jr., Cobourg, 5s.

Hops, not less than 112 lbs.

1. John Flanagan, Cornwall, £2 10s; 2. Abraham Pake, Prince Edward, £1 10s; 2. William Colquhoun, Cornwall, £1.

Potatoes.

1. S. Barnhart, Leeds, 15s; 2. D. Manhart, Leeds, 10s; 3. M. W. Hippey, East Williamsburg, 5s.

Swede Turnips.

1. W. McGee, Lanark, 15s; 2. R. L. Denison, Toronto, 10s; 3. H. Paterson, Elizabeth town, 5s.

Red Carrots.

1. Baron de Longueuil, Kingston, 15s; 2. W. F. Weese, Prince Edward, 10s; 3. H. Paterson, Elizabeth town, 5s.

White or Belgian Carrots.

1. Baron de Longueuil, Kingston, 15s; 2. Rev. J A. Allen, Wolf Island, 10s; 3. G. Buddien, Cobourg, 5s.

Mangel Wurzel, (Long Red).

1. Rev. J. A. Allen, Wolf Island, 15s; 2. A. Shaw, Toronto, 10s; 3. J. W. Rose, Dundas, 5s.

Yellow Globe Mangel Wurzel.

1. A. Shaw, Toronto, 15s; 2. Baron de Longueuil, Kingston, 10s.

Red Globe Mangel Wurzel.

2. Baron de Longueuil, Kingston, 10s.

Khol Rabi.

1. Professor Croft, Toronto, 10s; 2. R. Wade, jr., Cobourg, 5s.

Sugar Beet.

1. A. Shaw, Toronto, 15s; 2. W. Beaty, Leeds, 10s; 3. W. F. Weese, Prince Edward, 5s.

Parsnips.

Baron de Longueuil, Kingston, 15s.

Broom Corn Brush.

1. A. Shaw, Toronto, £1; 2. W. F. Weese, Prince Edward, 15s.

HORTICULTURAL PRODUCTS.

JUDGES — Professor Croft, Toronto; Professor Nicol, Toronto; Baker, Guelph.

Varieties of Apples.

1 S. Jones, Brockville, 15s; 2 W. Beatty, Leeds, 10s; 3 J. Fleming, Toronto, 5s.

Table Apples.

1 P. Fisher, Halton, 10s; 2 J. Sampson, Kingston, 7s 6d; 3 G. Gardener, Leeds, 5s.

Winter Apples.

1 H. Turner, Toronto, 10s; 2 A. Grant, Brockville, 7s 6d; 3 J. Fleming, Toronto, 5s.

Table Pears.

1 Rev. E. Baldwin, Toronto, 10s; 2 Baron de Longueuil, Kingston, 7s 6d; 3 W. F. Weese, Prince Edwards, 5s.

Plums (Dessert.)

1 J. Gardener, Hamilton, 10s.

Baking Plums.

1 Rev. E. Baldwin, Toronto, 10s.

Peaches, hot house.

1 J. Sorlie, gardener to Lord Elgin, 10s.

Peaches, open air.

1 S Jones, Brockville, 10s; 2 M. C. Nickerson, Port Dover, 7s 6d.

Grapes, hot house.

1 E. Turner, Toronto, 10s; 2 do 7s 6d; 3 W. B. Jarvis, Toronto, 5s.

Grapes, open air.

1 Mr. Collier, Toronto, 10s; 2 Rev. E. Baldwin, Toronto, 7s 6d.

Black Grapes, open air.

1 R. Ellingham, Brockville, 10s.

White Grapes, open air

1 W. Beatty, Leeds, 10s.

Pumpkins.

1 A. Shaw, Toronto, 10s; 2 W. F. Weese, Prince Edward, 7s 6d; 3 Dr. Reynolds, Brockville, 5s.

Squash.

1 W. March, York, 10s; 2 S. Jones, Brockville, 7s 6d.

Tomatoes.

1 J. Gardener, Hamilton, 10s; 2 A. Shaw, Toronto, 7s 6d; 3 J. W. Rose, Williamsburgh Dundas, 5s.

Winter Cabbage.

A. Shaw, Toronto, 10s; 2 H. Turner, York, 7s 6d; 3 J. Fleming, Toronto, 5s.

Carrots.

2 prem., W. F. Weese, Prince Edward, 7s 6d; 3 H. Patterson, Leeds, 5s.

White Celery.

1 J. Wadsworth, Kingston, 10s; 2 J. Fleming, Toronto, 7s 6d; 3 Baron de Longueuil, Kingston, 5s.

Red Celery.

J. Fleming, Toronto, 10s.

Capsicums.

J. Wadsworth, Kingston, 10s; 2 J. Fleming, Toronto, 7s 6d.

Egg Plants.

1 Baron de Longueuil, 10s; 2 J. Fleming, Toronto, 7s 6d; 3 do 5s.

Blood Beets.

1 Baron de Longueuil, Kingston, 10s; 2 J. W.

Rose, Williamsburgh Dundas, 7s 6d; 3 J. Fleming, Toronto, 5s.

White Onions.

1 Baron de Longueuil, Kingston, 10s; 2 W F. Weese, Prince Edward, 7s 6d; 3 H. Turner, Toronto, 5s.

Yellow Onions.

1 W. F. Weese, Prince Edward, 10s; 2 Baron de Longueuil, Kingston, 7s 6d; 3 Jas Sorlie, gardener to Lord Elgin, 5s.

Red Onions.

1 Baron de Longueuil, Kingston, 10s; 2 J. Weese, 7s 6d; Jas. Sorlie, gardener to Lord Elgin, 5s.

Salsify

1 A. Shaw, Toronto, 10s: 2 do 7s 6d.

White Beans.

1 J. E. Vanderwort, Belleville, 10s; 2 J. Shipman, Leeds, 7s 6d; 3 S. Slack, Leeds, 5s.

Cut Flowers.

Recom. to Exhibitor from Rochester, 10s.

Annuals in Bloom.

1 J. Fleming, Toronto, 10s.

Floral Ornament.

1 Baron de Longueuil, Kingston, £1.

Musk Mellon.

1 J. Fleming, Toronto, 10s; 2 do 7s 6d; 3 S. Jones, Leeds, 5s.

Canada Coffee.

1 W. March, Scarboro', 10s; 2 do 7s 6d.

CLASS P,—IRON HOLLOW WARE:

JUDGES—S. Hurlburt, Prescott; R. Watson; N. L. Bleasdale.

Cooking Stove.

1 J. R. Armstrong, Toronto, £1 10s.; 2 J. R. Armstrong, Toronto, £1; 3 R. P. Colton, Brockville, 10s.

Parlour Stove.

1 J. R. Armstrong, Toronto, £1; 2 R. P. Colton, Brockville, 10s.

Best System of Ventilating Buildings.

H. Ruttan; Cobourg, Diploma and £2.

Balance Scales.

J. Philips, Leeds, £1.

Steaming Apparatus.

J. R. Armstrong, Toronto, £1 10s.

Cooper's Tools.

H. H. Date, Galt, Diploma.

Bench Planes.

A. Dodge, Lanark, 15s.

Broom Handles, turned.

1 R. Brough, Leeds, 10s.; 2 do., do., 5s.

Flour Barrels.

J. Wright, Augusta, £1.

Wash Tub.

1 E. H. Wheeler, Leeds, 7s. 6d.; 2 do., do., 5s.

Washing Machines.

S. Skinner, Brockville, 10s.;

Pair of Hames.

1 J. Combs, Brockville, 10s.; 2 Skinner & Mc Culloch, Brockville, 5s.

Saddle Tree.

1 J. Combs, Brockville, 10s.; 2 do., do., 5s

Weaver's Reeds.

J. Williscraft, Leeds, 10s.

Spinning Wheel.

1 R. Brough, Leeds, 10s.; 2 do., do., 5s.

Wheel Heads.

1 R. Brough, Leeds 15s.; 2 do., do., 10s.

Churn.

1. A. Haines, Stormont, 15s.; 2 S. A. Wright Oshawa, 10s.

Model Bee-hive.

E. Shipman, Leeds, 10s.

Bundle Shingles, sawed.

1 H. Booth, Leeds, 10s.; 2 J. Woolley, Leeds, 5s

Bundle Shingles, split.

S. Hurlburt, Prescott, 10s.

CLASS Q,—LADIES' DEPARTMENT.

JUDGES—Mrs. James Crawford, Brockville; Mrs. Watson; Mrs. Dana; Mrs. Roberts; Norman McDonald; Geo. Crawford; Wm. Matthie.

Crotchet Work.

1 Miss Scakler, Brockville, £1: 2 Miss Sarah J. Gilbert, Sidney, 15s.: 3 Miss F. Mott, Belleville, 10s.

Woollen or Cotton Netting.

1 Miss Steele, Brockville, 15s.; 3 Miss Atkinson, Toronto, 7s. 6d.

Fancy Netting.

1 Mrs. Hewlett, Toronto, 15s.; 2 Miss Fitsgerald, Brockville, 10s.; 3 Miss Buell, Brockville, 7s. 6d.

Fancy Knitting.

1 Mrs. Borrison, Brockville, 15s.; 2 Mrs. Bellino Bayton, 10s; 3 Mrs. Reid, Leeds, 7s. 6d.

Embroidery.

1 Mrs Hardy, Frontenac, £1; 2 Mrs. Burton Brockville, 15s.

Raised Worsted Work.

1 Sophia A. Morris, Brockville, £1; 2 Mrs. Finden, Belleville, 15s.; 3 Miss Hughes, Brockville, 10s.

Wax Flowers.

Margaret M. Arras, Brockville, 15s.

Woollen Socks.

1 W. J. Weese, Ameliasburgh, 3s. 9d.; 2 Mrs. Vanderwort, Belleville 2s. 6d.

Woollen Stockings

Miss R. Gile, Leeds, 3s. 9d.

Woollen Mittens.

1 Miss Bourine, Cobourg, 10s.; 2 Mrs. Pennock Grenville, 2s. 6d.

Woollen Gloves.

Miss Page, Cobourg, 10s.

Hat of Canadian Straw.

2 T. T. Johnson, Leeds, 5s.; 3 J. Gilbert, Hastings 2s. 6d.

Gentleman's Shirts.

3 Mrs. Pinnock, Augusta, 5s.

Quilts.

1 Miss I. A. Chipman, Leeds, £1 5s.; 2 Mis Williams, Toronto, £1; 3 Mrs. Gowan, Brockville, 15s.

CLASS R,—FINE ARIS.

JUDGES.—D. B. O. Ford, Brockville; Dr. Naphegyi, Paris, C.W.; R. Bell, M.P.P., Carleton.

In Oil.

Historical Painting, Canadian subject, Paul Kane, Toronto, Diploma and £3; 2 do do, £2.

Landscape, Canadian subject, do., Diploma and £3; 2 Miss Ida C. Jones, Brockville, £2.

Animals (grouped or single) Paul Kane, Toronto, Diploma and £3.

Portrait, Paul Kane, Toronto, Diploma and £2 10s; 2 Miss Ida C. Jones, Brockville, £1 10s.

In Water Colours.

Portrait, Hoppner Meyer, Toronto, Diploma and £2; 2 do do, £1.

Miniature: do do, Diploma and £2.

Pencil and Crayon.

Pencil Portrait, Hoppner Meyer, Toronto, Diploma and £1 10s; 2 do do, £1.

Crayon Portrait, Hoppner Meyer, Diploma and £1 10s.

Pencil Drawing, Miss Ida C. Jones, Brockville, Diploma and £1 10s.

Crayon Drawing, Miss Ida C. Jones, Brockville, Diploma and £1 10s; 2 R. Coleman, Brockville, £1.

Coloured Crayon, Miss I. Morris, Brockville, Diploma and £1 10s; 2 T. C. Carpendale, Toronto, £1.

Daguerrotype, E. G. Palmer, Toronto, Diploma and £1 10s.

Lithographic Drawing, Hoppner Meyer, Toronto, Diploma and £1 10s.

Ornamental Writing, Dr. Naphegyi, Paris, Diploma and £1.

CLASS S,—POTTERY.

JUDGES.—E. W. Thomson, Toronto; C. E. Jones, Brockville; J. Dunn, Kingston.

Pottery, J. Mooney, Prescott, £1; 2 J. Baillie, Darlington, 15s; 3 do do, 10s.

Draining Tile, J. Mooney, Prescott, £1.

CLASS T,—BOOKBINDING, PAPER, &c.

JUDGES.—D. Wylie, Brockville; H. J. Ruttan, Cobourg; J. Duff, Kingston.

Letter Press Printing executed since last Exhibition, Thomas McClear, Toronto, £2 10.

CLASS V,—PLOUGHING.

JUDGES.—Henry Freeland, Brockville; James Wilkie, Brockville; David Pickan, Brockville.

1 James Thomson, Bytown, £4; 2 William Young, Ramsay, £3; 3 Peter Young, Ramsay, £2; 4 H. Patterson, Elizabethtown, Leeds.

CLASS W,—POULTRY.

JUDGES.—E. W. Thomson, Toronto; Geo. Miller, Markham; J. Dunn, Pittsburgh.

Poland Fowls, A. Shaw, Toronto, 10s; 2 do do, 5s.

Large-breed Fowls, W. Dowling, Leeds, 10s; 2 do do, 5s.

Turkeys, S. Jones, Brockville, 10s.

Large Geese, A. Shaw, Toronto, 10s; 2 R. Wade, jr., Cobourg.

CLASS X,—GENERAL CLASS [FOREIGN]

Premiums for Stock belonging to persons residing out of Upper Canada.

JUDGES ON FOREIGN STOCK.—P. Clapp, Prince Edward; D. M'Lennan, Glengary; M. Petty, Russell.

Best Ayrshire Bull, John Gilmour, Quebec, Diploma and £2 10s; Best Ayrshire Cow, G. Johnson, Montreal, Diploma and £1 10s.

Best Devon Bull, Mr Scriver, Hemmingford, Diploma, and £2 10s.

Best Fat Steer, G. Johnson, Montreal, 15s.

Best Stallion for Agricultural purposes, R. W. Graham, Beauharnois, Diploma and £3 0s; 2 S. Robinson, Morristown, £3.

Best Blood Stallion, G. Farish, Ogdensburg, Diploma and £3.

Best Boar Pig, large breed, H. H. Davies, St. Lawrence, N.Y., £1 5s.

Best Barrow Hog, G. Johnson, Montreal, 15s.

Thorough-bred Stallion, A. Stark, Oswego, £1.

JUDGES ON FOREIGN IMPLEMENTS.—J. Wade, Port Hope; Sheriff Ruttan, Cobourg; D. A. McPherson,

An assortment of Implements, John Rapalge & Co., Rochester, Diploma and £5.

Cultivator, Thompson & Gregory, Jefferson Co., N. Y., $5.

Corn and Cob Crusher, Rapalge & Co., Diploma and $5.

Clover Machine, do do, Diploma and $8.

Seed Drill, Rapalge & Co., Diploma and $4; Grain Drill, do do, $4.

Fanning Mill, Rapalge & Co., Diploma and $1.

Portable Grist Mill, Rapalge & Co., Diploma and $10.

Harrows, Rapalge & Co., $4.

Franklin Plough, Camp & Blake, Malone, N.Y., Diploma and $4.

Series of Ploughs, comprising 13 varieties, Rapalge & Co., $10.

Plough, G. Wilson, Jefferson Co., N. Y., 15s.

Subsoil Plough, Rapalge & Co., Diploma and $4.

Reaping Machine, Rapalge & Co., Diploma and $10.

Horse Power Thrasher and Seperator, Rapalge & Co. Diploma and $10; do, Page & Co., Montreal, Diploma.

Straw Cutter, Rapalge & Co., $4.

3 Sleighs, Mr. O'Meara, Montreal, a Diploma.

Chain Pump, J. W. Wheeler, Seneca Falls, Diploma.

Piano Forte—a very superior instrument, and considered worthy of special notice—J. Starr, Rochester Diploma.

Set of Planes, L. Case, Jefferson Co., 10s.

Handle Whips, J. Strong, Rochester, 10s.

Pottery, Mr. Bell, Quebec, Diploma.

Nails, T. Peck, Montreal, Diploma.

Jenny Lind Trunk, A. R. Pritchard, Rochester, Diploma.

Notwithstanding the number of prizes given to Rapalge & Co., the committee noted several articles they exhibited as worthy of special notice.

DISCRETIONARY PRIZES.

Sow Pig, J. W. Hough, Leeds, £1.

Do. do., Rev. J. A. Allen, Wolf Island, £1.

Portable Cider Mill: J. H. Mackenzie, Peterboro, diploma, and 25s.

Half dozen Axe Handles: Jas. Aashfield, Drummondville, 5s.

Planing Machine: Jas. Ashfield, diploma.

Carpenters Tools; H. H. Date, Galt, diploma.

Bark Mill: R. P. Colton, diploma, and 5s.

Farmer's Shears: R. P. Colton, diploma, and 5s.

Hon. Mr. Ransellaer, N. Y., nectarines, 10s.

James Sorlie, Gardiner to Lord Elgin, hot house nectarines, 10s.

A. Shaw, Toronto, 12 quinces, 10s.

W. McGee, Lanark, 10lbs. onion seed, 10s.

H. Croft, Toronto, Fruit of Martinique, 10s.

H. Turner, Toronto, 12 parsnips, 10s.

A. Shaw, do., chicory, 5s.

C. S. Ryan, Rochester, 14 varieties of apples, 6 pears, 10 peaches, 15s.; 96 double dahlias, 6 petunias 12 verbenas, 15s.

Cockburn & Brown, Montreal, cauliflower, 10s.; do., savoys, 10s.

Mr. Brown, Montreal, dahlias, grapes, 10s; summer cabbage, 10s; peaches, plums, 10s; apples, pears, 10s. Diplomas were given to Mr. Brown on all of the preceding.

Rev. J. A. Allen, Wolf Island, best long yellow mangel wurtzel, 15s.

John Smith, Montreal, tobacco grown at St. Luke, Diploma.

W. March, Scarboro', Siberian oil seed, 10s.

W. Brown, Halton, millet seed, 10s.

A Jones, Brockville, 4 barrels of flower, diploma.

Mr. Penner, Montreal, cider, Diploma.

Scythe Snaiths: Skinner & McCullough, Brockville, diploma.

Shingle joiner: H. Booth, Leeds, diploma.

Artificial Leg; J. S. Sloane, Hamilton, diploma.

Steele Files: John Langstaff, Richmond Hill, 5s.

Rustic Chair: James Evatt, 15s.

Hair Work Bracelets, Chains: Miss H. Macdonnell, Edwardsburg, 10s.

Artificial Flowers: Miss Fisher, Nelson, 5s.

Needle Work: Miss Attorell, Kingston, 10s.

Berlin Flowers, 2 sets: Miss Mott, Belleville, 5s.

Moss House: Miss Ellen West, Leeds, 5s.; Rush Basket and Balls to do., 5s.

2 Bonnets: Miss Mott, Belleville, 5s.

Fancy Knitting: Messrs. Waddel & Rose, Brockville, 10s.

Raised Worsted Work: Miss H. Campbell, Brockville, 5s.

S. Hurlburt, Prescott, Carriage Springs, 5s.

P. McKay, Halton, side of horse skin, 5s.

W. A. Clark, Toronto, Shoe Linings, 10s.

T. Smart, Brockville, Fur Victorine, 5s.

Do. do. Gentleman's Boa, 5s.

Do. do. Lady's do., 5s.

R. Jones, Bellveille, Spring Waggon, 10s.

A. Dixon, London, Lady's silk Hat, 5s.

Gore powder Mills, Gunpowder, 10s., and diploma.

J. Boese, Montreal, Oil Cloth, 5s.

Dr. Naphagyi, Paris, Beet root Molasses, 5s.

Do. do. Liquors from Sugar Beet, 5s.

J. McNean, Dickinson's Landing, Honey, 5.

G. Gardner, Leeds, Honey, 5s.

J. W. Rose, Williamsburgh, Dundas, Red Globe Mangel Wurtzel, 15s.

Miss Fitsgerald, Brockville, Lady's Lace Dress 10s.

Miss Tyner, Brockville, Tissue Flowers, 5s.

H. Meyer, Toronto, Collection of Canadian Portraits, £2 and diploma.

H. Lewis, St. Louis, View of Fort Snelling, £1.

Miss Barker, Kingston, Picture frame (leather), 10s.

Dr. Naphagyi, Paris, C.W., Oil portrait, 20s.

Miss Fitsgerald, Brockville, Oil portrait, 10s.

Do. do, Landscape, 20s.

Miss Post, Picton, Flowers in Oil, 10s.

E. H. Olds, Ogdensburg, N. Y., Daguerrotype, diploma.

T. C. Carpendale, Toronto, Chalk Drawings. £2. 10s. and diploma.

E. J. Ring, Hamilton, Japanned Work, diploma and 10s.

A Farmer's Barometer.—A writer in the Georgia Farmer gives directions for making a cheap Barometer to aid in foretelling the weather. He takes a stick three feet long, and attaches to the butt end of it a phial, full of air of course, and corked tight. The stick is then suspended in a horizontal position, on a pivot, where it will readily turn—say on a thread tied near its centre.

When a storm is coming on, the air, outside, is lighter than that in the phial; of course the phial sinks and indicates a change in the atmosphere.—Such a Barometer may be made in ten minutes, and some of our young philosophic farmers will incline to have Barometers of their own manufacture.—*Mass. Ploughman.*

Crops in Wisconsin.—A correspondent of the Chicago Tribune, writing from Janesville, Wisconsin, says the wheat crop in that section of the country, notwithstanding the destruction of a great portion of it by blight, is fair. The average yield is from twenty to twenty-five bushels to the acre, and of a very superior quality. The yield of oats is the heaviest ever known, amounting in some instances to sixty bush-

els per acre. Corn, generally late, owing to the wet weather of the spring; yet if the frost hold off, a fair crop may be expected.

To the Editor of the Canadian Agriculturist.

Blackrock, N. Y., Sept. 28th, 1851.

SIR,—

I shall be much obliged if you will send me your paper containing Mr. Parsons' letter on Short Horns, as I have mislaid the one you sent me.

In the first place I will ask Mr. Parsons if he read the account of the Smithfield Show, last Christmas? If he did I am a *little surprised* at his taking *credit* to the Short Horns for "*early maturity*," when the triumph for Herefords was so *obvious* that the most *obstinate* were obliged to give way. Mr. Heath's two year old steer that took the first prize, in the first class, was exactly the same dimensions, and varied but little in weight to the three year old Short Horn that took the first prize in the second class. I refer you to the *Mark Lane Express* of Dec. 17, 1850. *This is "proof"* not puffing. I also refer you to the same paper the following week, to an account of ten two year old Hereford steers shown at the Birmingham Cattle Show, Dec. 18, 1850, by Sir Francis Lawley, Bart, estimated by the best judges to weigh forty scores in their beef. I ask Mr. P. whether he ever saw ten Short Horns of that age and weight? If so, I shall be obliged if he will *refer you to the place and time of his seeing or hearing of them*. If Mr. Parsons has been so extensive a breeder and feeder as his letter seems to say, the prominent names I shall bring forward in my communications in the defence of the abused Herefords will be very familiar to him. They are men of the highest standing, and will not deviate from the truth; such men whose veracity is without doubt.

The first name I shall introduce to you is Wm. Fisher Hobbs, Esq, of Marks Hall, Essex; a man well known to the agricultural world. The following is an extract from one of his letters to me, which I send you, and please to preserve:—

"I am happy to correspond with you as a breeder of Hereford cattle, and I am pleased to find that your views respecting them quite coincide with mine. When I commenced farming, I was an ardent admirer of the Short Horns, and was determined to have a first rate herd of them. I bought a number of first rate animals, as good blood as any in England. At the same sale (Lord Huntingfield's) I bought a few Hereford heifers, because they sold cheap. I kept these animals together for twelve months, and to my surprise the Short Horns could not live with the Herefords. The latter kept their condition, and improved, but the former soon began to decline. I therefore, contrary to my own inclination, sold off the Short Horns and kept to Herefords. I have now for several years been a breeder of them, and have at different times gone to great expense in purchasing heifers, and also hiring and purchasing bulls of the best blood."

Such a *trial* and such *proof* as this, is worth all the dicta of Mr. Parsons, and he will find that wherever they have been kept together, in several cases in England, this has been invariably the case, and which I shall prove in another communication. I will defy Mr. P. to *prove* that the Short Horns have been triumphant in any single instance.

I will next refer you to the Rev. J. R. Smythies near Colchester, Essex, who has frequently challenged to show against the Short Horns or Devons, for all purposes, in any way his opponents would meet him; giving them the opportunity to appoint the name of the person to take the animals for trial. All that he proposed, was, that he should be an *honest man*. He cared not whether he was a breeder of Short Horns, Devons or Herefords. These challenges were never accepted. I do not bring this forward as proof, but to show what opportunities breeders of Short Horns have had to show the *proof* of their superiority.

Mr. Wescan, of Creslon, Buckinghamshire, once sold twenty Hereford oxen for two thousand one hundred and fifty odd pounds. "I once stated this fact," says Mr. Smythies, "in a letter in the *Farmer's Journal* and in the *Mark Lane Express*, Feby. 19, 1849, which letter was ridiculed in a letter the following week, written by Mr. Henry Berry, who was a great advocate for the supremacy of short horns, as a perfect impossibility. A few days after this letter appeared, I received one from a gentleman staying at Creslon, containing an extract from Mr. Wescan's books, giving the date of sale, the names of the butchers they were sold to, and the sum paid for them, amounting together to the sum I have mentioned. Six of them were

sold in one lot to Mr. Giblet, of Bond Street, for six hundred pounds. This is some *proof* of the value of Herefords. "I am convinced in my own mind," says Mr. Smythies, "that no animal can be fatted on the common vegetable produce of the farm so soon, or brought to such perfection on grass, hay and roots only, as a Hereford, and this appears to me to be the greatest desideratum at the present day, that we should be able to convert the vegetable produce of our farms into animal matter, at the greatest advantage, and that we should not have to go to the foreigner to purchase oil cake to feed our beasts when we have enough at home to feed them with; if we select the proper animals. I know it is a notion among short horn breeders that oxen cannot be fatted without cake or corn." Mr. Smythies says in the same letter, "I once showed a fat cow at Bath, and won the prize with her, and sold her to Mr. Hall the celebrated butcher, in that town, who told me she was the fattest animal he had ever seen. I had given in a certificate that she had been fed on grass, hay and roots only. This is a *proof* of easy keeping. Some people who saw her thought it impossible she could be so fed, and somebody just before the judges entered the yard threw some oil cake into the manger before her, in hopes the judges might see her eating it. This I was told by one of the judges when he came out of the yard, and he added, she had evidently never seen such a thing before for she took no notice of it. We tried her competitors with it and they ate it up in a minute. So convinced am I of the superiority of Hereford cattle for feeding purposes over any other, that I am most anxious to have them brought fairly into competition, and whenever they are so, honestly and honourably, I am willing to back my opinion."

In 1839, at the Royal agricultural Show, at Oxford, there was a premium offered for the best cow of *any breed for milking purposes*, the only time such a premium was offered by that society. There was a large competition of Short Horns and Herefords. Mr. Smythies' Hereford cow took the first prize, a Short Horn second. I refer you to the *Farmer's Magazine*, for August, 1839. I will give you some *proof* of milking Herefords in my next, that will exceed Mr. Chapman's cow, the only *proof* quoted in Mr. Parsons' letter.

WM. HY. SOTHAM.

We are informed that a lad of about 14 years of age was destroyed by a bear, in Stoneham last week; and that the father was severely injured by the animal, in going to the rescue of his son. The townships to the north of our city, seem to be infested with bears this summer: and we are told, they have caused damage to the *inhabitants*, and have destroyed a great number of domestic animals.—*Quebec Gazette.*

THE SOWER TO HIS SEED.

Sink little seed, in the earth's black mould,
Sink in your grave so wet and so cold—
There must you lie;
Earth I throw over you,
Darkness must cover you,
Light comes not nigh.

What grief you'd tell, if words could say:
What grief make known for the loss of the day!
Sadly you'd speak:
Lie here must I ever?
Will the sunlight never
My dark grave seek?

Have faith, little seed; soon yet again
Thou'lt rise from the grave where thou art lain;
Thou'lt be so fair.
With thy green shades so light,
And thy flowers so bright,
Waving in the air.

So we must sink in the earth's black mould,
Sink in the earth so wet and so cold,
There we must stay,
Till at last we shall see
Time change to eternity,
And darkness to day.

WHEAT IN SARATOGA COUNTY.—We learn that the present season there has been more wheat raised in this county than is sufficient for home consumption. As our farmers were compelled to abandon the culture of Wheat some years ago, on account of the ravages of the *Wevil;* and as the crop of the present year was but slightly affected by this insect, the presumption is, that for years to come, our county will be as in years past, a wheat growing locality. We learn that many of our farmers are preparing to sow, the present Fall, large quantities of wheat, as from the experience of the present year, they are satisfied that it will prove a sure and profitable crop. While lands in the western section of this State, command from $60 to $80 per acre, these equally as good for the raising of all crops (wheat included) can be purchased here from $35 to $40 per acre; and we have no doubt, as it is now known that fine crops of wheat can be raised here, that the result will be that within two years real estate will advance in price in this County from twenty to thirty per cent. In our opinion no better investment can be made, than the purchase at present prices, of lands in this county.—*Ballston Dem.*

ENORMOUS YIELD.—Mr. John Q. Hewlett, residing about three miles from Baltimore on the Fredrick Turnpike road raised this season seven hundred and eighty bushels of prime white wheat on a field containing eighteen acres, two roods and six perches—being a very small fraction under forty-two bushels per acre. The grain was sold for ninety-five cents per bushel.—*Baltimore American.*

One acre of the farm of Rev. Allen Steele, near Batavia, in Genesee co., produced the following unprecedented amount of wheat. The harvest from the acre yielded sixty five and one half bushels! The wheat overran the usual wheat two pounds on each

bushel, and the rakings of the field amounted to one and half bushel, making with the overweight very near seventy bushels to the acre.—*Buff. Chris. Adv.*

KNOWLSON'S COMPLETE FARRIER.

DISORDERS OF THE KIDNDYS AND BLADDER.

Inflammation of the kidneys and bladder are sometimes brought on by other disorders, and often by sprains, hard exercise, catching cold when hot, or from want of proper care.

Symptoms of a Hurt in the Kidneys. The horse is very weak in the back and loins; he stales with difficulty, is faint, eats very little, his eyes appear languid, and of a dead colour; his urine is foul, thick, and often bloody, especially after a violent strain; he cannot move backward without great pain, which may be seen at every attempt. It is sometimes hard to distinguish an inflammation from a sprain, or what is called "tifled in the back." There is no method but observing the gait of the horse. If he have got tifled in the back, it will be hard put to it to keep from coming down behind, and indeed will oft come down; his eyes look rather large, but his urine the same as before. A tifle lies in the marrow, or pith, of the back.

Cure. The principal remedy for a hurt in the kidneys is bleeding, which should be done pretty plentifully, as by this means an inflammation will be prevented; and if you have reason to think that the inflammation is already begun, from the creature's being feverish, and staling with great difficulty, the operation should be repeated; for unless the inflammation be prevented, or immediately removed, the consequence will be fatal. But although bleeding is the principal, it is not the only remedy, for rowelling is of great service. Put a rowel on each side of his belly, and give the following ball twice a day, in a pint of the decoction of marshmallows, having an ounce of gum arabac, and an ounce of honey dissolved in it.

2 oz. of Salts of Prunella.
6 drachms of Spermaceti.
2 oz. of Castile Soap.

Add as much honey as will make a ball; and if the urine be bloody, an ounce of Japan earth must be added. If the fever continue, you must repeat the bleeding, and give emollient clysters, and the cooling opening drink before recommended for fevers, till it abate. These methods will often prove successful, but sometimes the disease is too obstinate to be overcome by them, and the urine still passes with pain and difficulty. Recourse must then be had to the following balls, and they must be repeated twice a day till the horse stale without pain, and his urine become clear, and without any purulent settlement.

1 oz. of Venice Turpentine.
1 do Castile Soap.
6 drachms of Nitre.
2 do Myrrh, in powder

Make the whole into a ball with honey, and wash it down with a strong decoction of marshmallows.

These are the best methods of treatment in this disorder, and will in general prove successful. Sometimes indeed this malady is too strong for the power of medicine, and then the urine continues turbid, and daily becomes of a deeper colour, with a fœtid smell,—a sure sign that the kidneys are ulcerated; which generally terminates in a consumption, and the creature becomes absolutely incurable.

In treating of the Cholic I have recommended a method for removing the Stranguary, when it proceeds from wind, or from dung pressing upon the neck of the bladder; but sometimes it proceeds from an inflammation, and a retention of urine.

Symptoms of Inflammation of the neck of the bladder. When a horse is seized with a Stranguary from the above cause, he will make frequent motions to stale, standing wide and straddling, his bladder being full of urine, and his flanks distended; he will be uneasy, constantly shifting his hind feet, and often giving clicks in his motions; he also sometimes hangs his head, and then raises it suddenly.

Cure. First bleed largely, and then give the following:—

1 oz. of Spirits of Sweet Nitre.
4 do Syrup of Marshmallows.
1 do Venice Soap.

Cut the soap small, dissolve it in a gill of hot water, put the above to it, and give it to the horse. Repeat it every eight hours. Also dissolve an ounce of gum arabic and an ounce of nitre in a gallon of water, and let him drink plentifully of it. If he will drink it of his own accord it is best; but if not, horn a little into him, for it will greatly tend to remove the cause of the disease, and consequently to terminate the effects.

There is a disease of the kidneys, viz. a Diabetes, or profuse staling, which produces effects directly opposite. This disorder is seldom cured in old horses, as their fibres are become rigid, and unable to perform their office,—a misfortune which all the power of medicine cannot remove. But in young horses this disease is often cured, and the following method will generally be attended with success.

Cure of a Diabetes. In order to cure this threatening disorder, great care must be taken not to let the horse drink too much water, and never to give him any moist food. Attention to these particulars will go a great way towards a cure; and instead of giving him common water to drink, give him lime water to drink; to make which, take about three pounds of lime, unslacked, put it into a clean vessel, and for every pound of lime pour six quarts of water into it; let it stand three days, take the scum off the top, and give the horse the water to drink. (Be careful not to stir the lime at the bottom of the vessel.)

This is a very clear, wholesome water, and very good for many disorders. In the mean time the following medicine should be given.

1 oz. of Peruvian Bark.
1 do. Japan Earth, in Powder.
1 do. Irish Slate, do.

Give these in lime water, and you may repeat it as often as needful.

Some Farriers give strong alum possets two or three times a day; but this kind of treatment cannot be proper, for the alum takes so fast a hold of the juices of the stomach, that if the horse were not ill, it would be enough to make him so. But if the above are properly given, thay will not disappoint expectation.

THE MOLTEN GREASE.

This is so common a disorder, that it ought to be well understood; but, alas! like many others, it is often mistaken for something else. This disease is a melting down of the fat of the horse's body, caused by violent exercise in very hot weather; or if the horse be full of flesh, it may happen in cold weather. Hard riding, or sudden colds, will bring on this disorder.

Symptoms. It is always attended with a fever, heat, restlessness, startling and trembling, inward sickness, and shortness of breath. Also the horse's dung is extremely greasy, and he often falls into a scouring. His blood, when cold, is covered with a thick scum of fat, of a white or yellow color, but generally the latterr The congealed part, or sediment, appears like a mixture of size and grease, and is so extremely slippery that it will not adhere to the fingers; and the small proportion of serum is also slippery and clammy. The horse soon looses his flesh and fat, the latter being probably dissolved into the blood. Such as have sufficient strength to sustain the first shock, commonly become hidebound, and their legs swell greatly; and in this state they continue till the blood and juices are rectified; and if that is not done effectually, the Farcy, or an obstinate Surfeit, is generally the consequence, which cannot be removed but with the utmost difficulty.

Cure. In the first place, bleed pretty plentifully, and repeat the operation two or three days successively; but take care that you take only a small quantity at a time after the first bleeding, as otherwise the creature would be rendered too weak to support himself, and his blood too poor to be easily recruited. As soon as he has been bled the first time, let two or three rowels be put in, and the emolient clysters prescribed for Fevers be thrown up daily, to mitigate the fever, and to cleanse the intestines from the greasy matter. At the same time plenty of water-gruel should be given him, and sometimes a small quantity of water, with a little nitre dissolved in it. The latter will be of great service, as it will prevent the blood from running into grumous concretions, and proving the source of innumerable disorders, if not causing a total stagnation, and consequently the death of the animal.

The horse must be treated in this manner till the fever be entirely gone, and he shall have recovered his appetite; and then it will be necessary to give him three or four purges, a week distant from each other, which will make him stale and perspire plentifully, and at the same time bring down the swelling of his legs. The following is well calculated for the purpose.

6 drams of Socotrine Aloes.
4 do. Gum Guaicum, in powder.
2 do. Ginger.
2 do. Jalap.
2 do. Oil of Juniper.

To be made into a ball with syrup of buckthorn. By pursuing this method the horse will soon be recovered, for this purge will mend his appetite and increase his flesh. If it be too weak, add a dram more of Aloes. It will bring down his swelled legs, and carry away all the superfluous matter that clogs the blood. When you give the physic, be careful to give plenty of warm water all the time.

A SURFEIT.

Some people pronounce every ill-thriven horse surfeited, whether it is or not. A surfeit is nothing more than the effects of an ill-cured disease, and therefore what is called a Surfeit in horses is very different to the disease which bears that name in the human body; the latter being the beginning of a disease, and the former the remains of one.

Symptoms. The horse's coat will stare, look of a rusty colour, and even appear dirty, although the greatest pains have been taken to keep him clean. His skin will be covered with scales and dandriff which will appear like meal among the hair, and when cleaned off will be followed by a continual succession of the same matter, occasioned by the perspiration being obstructed. Some horses will be covered with a kind of scab, sometimes moist, attended with heat and inflammation, and the humour so very sharp, and causing so violent an itching, that the creature is incessantly rubbing himself, and by that means making himself raw in different parts of his body. Some horses have neither scales, dandriff, nor scab, but look dull, sluggish and lazy. Some are hidebound, and others afflicted with flying pains and a temporary lameness. In short the symptoms are very various, and almost as numerous as those of the scurvy itself.

Causes. The causes are various as the symptoms. Some horses are surfeited by high feeding and want of proper exercise; which produce a bad digestion, and generate ill humours. Some are surfeited by unwholesome food; some by hard riding; some by drinking cold water when they are hot; some by bad or improper physic, and some by standing in stables through which the rain drops, or by lying wet. But as many also get surfeited by standing when hot at the doors of public houses, such bad practices should be guarded against.

EXTRAORDINARY.

A large Beaver was killed a few days ago on the twelfth concession of Goulburn, by a dog belonging to Mr. Robert Young. The animal was discovered in a drain on the side of the main road, within a short distance of a branch of the head waters of the river Carp. It is rather a strange circumstance that a beaver should make his appearance in such a thickly settled part of the country, and in such a public place; the animal in his native state being remarkably shy and wary of the approach of man.

Our readers are aware of the fact that the introduction of silk and other materials in the manufacture of hats, has within a few years back, very materially reduced the prices of Beaver furs; they are perhaps aware also that reasoning powers are attributed to this wonderful creature by the Indians. In consequence of the cheapness of the skins, the animals have rapidly increased in numbers—but few being killed—and it is supposed the gentleman whose fate we chronicle, was a delegate commissioned by an overstocked population to investigate the causes of the decline of trade; or it may be, like his unfortunate friends, (?) the Aborigines, to treat with the Government for a new tract of land to emigrate to. We consider it a pity that the poor fellow was assassinated like a French soldier in the streets of Rome—as he might probably have driven a bargain for a few miles of the Rideau Canal which will exactly answer all purposes should the Railroad ever be completed.—*Orange Lily.*

Reaping Machines.—Mr. Mechi, the great English experimental farmer, has now made a full trial of the American reaping machine, and arrives at the following conclusion in regard to it: It will act perfectly on level land with a standing crop; that it will cut from ten to sixteen acres per day, according to circumstances; that the quantity cut depends more on the activity and strength of the man who has to remove it by rake from the board on which it falls; that open furrows and deep water furrows are much against the action of the machine; that the paddle-wheels do not in any way beat out or injure the corn; that certain trifling modifications in its details will be required where the straw is very long; that it will cut laid corn where it falls towards the machine, that where it falls from it, it is desirable to cut such portions by hand; that a proportionate number of hands to bind the corn will be required according to the crop; that all reaping will soon be done by horse or steam machines.

A Monster Cabbage.—We have heard of bipeds and quadrupeds with two heads on one body, but who ever heard of a cabbage with fifteen distinct and well formed heads on one stalk? Such a garden monster was however brought to our office on Thursday last by Mr. John Phillips, of Yonge, in whose garden this vegetable (*not intellectual,*) giant was raised.—*Brockville Recorder.*

A Mr. John McGillivary in the township of Lochiel, had a cow which became sick a short time ago and on the application of some milk, a snake about three feet and a half was disgorged from the stomach. The cow, however, ultimately died, and on opening her another old snake, about two feet and a half, and three young ones were found in her gullet.—*Constitutional.*

Extraordinary Crop of Wheat.—Mr. James Davidson, Keg-Lane, near Paris, cut a field of Wheat, which contained about six acres, producing the immense quantity of 480 shocks, which may be calculated to yield about 50 bushels to the acre. This gives us 300 bushels of Wheat from six acres of land. The quality of the grain is most excellent. There would be little reason to complain of the poor return from the Wheat crop, if every acre in Dumfries were as liberal and prolific as those owned by Mr. Davidson, even if every bushel brought only 4s or 5s york to the farmer's pocket.—*Galt Reporter.*

Husk Beds.—No one who has not tried them, knows the value of Husk Beds. Straw and mattrasses would be entirely done away with, if husk beds were once tried. They are not only more pliable than mattrasses, but more durable. The cost is trifling. To have husks nice they should be split after the manner of splitting straw for braiding. The finer they are split the softer will be the bed, although they will not be likely to last as long as when they are put in whole. Three barrels full, well stowed in, will fill a good sized tick, that is, after they are split. The bed will always be light, the husks do not become matted down like feathers, and they are certainly more healthy to sleep on. Feather beds ought to be done away with, especially in warm weather. For spring, summer and fall, husk beds ought to be 'all the go,' and such undoubtedly will be the case, when they are brought into use. There is no better time to procure husks than when the corn is being harvested, and the husks will be much nicer and cleaner when the corn is cut up at the bottom and put in stocks. They do not become so dry and weather-beaten. It is calculated that a good husk bed will last thirty years. Every farmer's daughter can supply herself with beds (against time of need) at a trifling expense, which is quite an inducement now a days.

Extraordinary Circumstance.—A few days ago a horse, the property of Mr. McCaul, of Castletown, was brought to Mr. Towers, veterinary surgeon, Dundalk, suffering from general derangement of the system. Having examined the animal, Mr. Towers prescribed some medicine, and shortly afterwards an eel was evacuated, measuring 15 feet. The eyes of the eel were covered with a light skin.—*Louth Advertiser.*

Good News for the Peach Growers.—We have seen peach trees in the District of Columbus, this summer, having much larger and more delicious peaches than our more Northern fruit, and the trees in the highest state of perfection, in consequence of being painted near the root by a cheap chemical paint, prepared by J. C. Lewis, Esq., of Washington City. This preparation works the almost instant destruction of the grub worm, the enemy of both tree and fruit, and so great an enemy that it is a common thing for them to destroy the fruit entirely in from three to five years. Having seen the perfection of the remedy and the vigor of tree and fruit in consequence of its application, we can recommend it to our friends in New York, New Jersey, Delaware, and everywhere where peach orchards are in cultivation.

All plants have a season of rest; discover what season is peculiar to each, and choose that season for transplanting.

We understand that large quantities of Corn and Oats have been destroyed by bears this season, whole fields of the latter being completely devasted, and rendered unfit for cutting. We have heard of the capture of one or two very large animals of this species, one of which was killed in the act of carrying off a pig. Wolves have been far less destructive than they were a few years ago. We remember some six years ago, that not only sheep but young horses and cattle were destroyed and eaten by those cunning, and fierce depredators.—*Orange Lily.*

Fruit out of Season.—Who will explain it? There is in the garden which I occupy, a Cherry tree, which blossomed last Spring, but brought forth no fruit. This month (September) it blossomed again, and is bearing fruit. The cherries are about the size of pears, and if the frost does not kill them, may come to perfection. This is a mystery for agriculturists to explain. If any doubt the truth of the above statement, they may call and see for themselves.

John Dower.

Darlington, Sept. 20, 1851.

A Gipsy Charm for the Horse.

'Are ye not afraid of that beast?' said the smith, showing his fang. Arrah its vicious that he looks!" "It's at you then! I don't fear him;" and thereupon I passed under the horse, between his hind legs. "And is that all you can do, agrah?" said the smith. "No," said I, "I can ride him." "You can ride him; and what else, agrah?" "I can leap him over a six foot wall," said I. "Over a wall; and what more, agrah?" "Nothing more," said I, "what more would you have?" "Can you do this, agrah?" said the smith; and he uttered a word which I never heard before, in a sharp pungent tone. The effect upon myself was somewhat extraordinary, a strange thrill ran through me; but with regard to the cob it was terrible; the animal forthwith became like one mad, and roared and kicked with the utmost desperation. "Can you do that, agrah?" said the smith.—"What is it?" said I, retreating, "I never saw the horse so before." "Go between his legs, agrah," said the smith, "his hinder legs," and he again showed his fang. "I dare not," said I, "he would kill me." "He would kill ye! and how do you know that, agrah?" "I feel he would, so mething tells me so." "And it tells ye truth, agrah; but it's a fine beast, and it's a pity to see him in such a state. Is agam an't leigeas," and here he uttered another word in a voice singularly modified, but sweet and almost plaintive. The effect of it was as instantaneous as that of the other, but how different; the animal lost all its fury, and became at once calm and gentle. The Smith went up to it, coaxed and patted it, making use of various sounds of equal endearment: then, turning to me, and holding out once more the grimy hand, he said. "And now ye will be giving me the Sassanach tenpence, agrah?—*Lavengro; the Scholar, the Gipsey and the Priest.*

Sagacity.—A Brooklin paper tells a story of Mr. Robinson, of Flatbush, L. I., who has two dogs, one a small spaniel, and the other a large half-bred deerhound. The small dog was playing with Mr. R's child near a sistern, when the child fell, head foremost, into the water; the agonized mother, who from a window witnessed the occurrence, saw the spaniel run to the kennel of the hound, who instantly ran to the spot and before the mother could reach the child, the noble dog had placed it in safety. Instinct might have induced the small dog to attempt a rescue, but evidently knowing his inability to do so, what prevented him from trying, and caused him, quick as thought, to fetch the stronger dog.—*Flag.*

The Remedy for Poisonous Bites.—Two cases of bites from rattlesnaks have recently come to public notice—one in Philadelphia, which proved fatal in a short time, the other in this city, in which case the injured man recovered entirely from the effects of the poison. The bites in the last mentioned case, were much the most serious, the person having received several wounds upon the arm from different snakes, which he was accustomed to handle without danger. The Philadelphia case a single bite upon the end of the finger. In both instances, swelling of the arm immediately ensued. Here, the man at once bound his arm above each wound with a ligature, and although for some time in a dangerous condition, he finally recovered. That he pursued the proper course is confirmed by Dr. Holbrook, of South Carolina, who has performed numerous experiments on animals, in regard to the efficacy of the ligature, in preventing the effects of the bite of poisonous snakes. The ligature, he says, should he applied a little back of the wound, as soon as possible after the infliction. It should not be made so tight as to induce mortification, but tight enough to check the external and mostly the internal circulation. He found that if the ligature was removed at any time before the verulency of the poison had spent itself, the animal would fall into convulsions; if tightened again the convulsions would soon cease, and the animal finally recover, if the effects of the poison had not been permitted to go too far.—*Rochester Democrat.*

Sleeping Flowers.—Almost all flowers sleep during the night. The marygold goes to bed with the sun, and with him rises weeping. Many plants are so sensitive that their leaves close during the passage of a cloud. The dandelion opens at five or six in the morning, and shuts at nine in the evening. The "goat beard" wakes at three in the morning, and shuts at five or six in the afternoon. The common daisy shuts up its blossom in the evening, and opens its "day's eye" to meet the early beams of the morning sun. The crocus, tulip, and many others, close their blossoms at different hours towards evening. The ivy-leaved lettuce opens at eight in the morning, and closes forever at four in the afternoon. The night-flowering cereus turns night into day. It begins to expand its magnificent sweet-scented blossoms in the twilight, it is full blown at midnight, and closes never to open again at the dawn of day. In a clover-field not a leaf opens until after sunrise! So says a celebrated English author, who has devoted much time to the study of plants, and often watched them during their quiet slumbers. Those plants which seem to be awake all night, he styles "the bats and owls of the vegetable kingdom."

Leaves shaded from the light do not acquire depth of color or strength of flavor; gardeners take advantage of this fact, tying up lettuces and earthing cellery, that they may be white and mild.

☞ We regret that we have been under the necessity of deferring the number for this month until so late a period; but our reason was, to be able to furnish our readers with an accurate list of the prizes awarded at the late exhibition held at Brockville.

☞ We are much indebted to the *Brockville Recorder* for the description of the Brockville Exhibition, to be found in another column.

NOTICE.

The Board of Agriculture, pursuant to adjournment, will meet in the City of Toronto, on November the 4th.

GEORGE BUCKLAND.
Secretary.

TORONTO MARKETS.

AGRICULTURIST OFFICE.
October 13, 1851.

The following are our quotations:—

	S.	D.		S.	D.
Flour ℔ brl 196 lbs	16	3	@	17	6
Wheat ℔ bushel 60lbs	3	1	@	3	4
Barley ℔ bushel 48lbs	2	0	@	2	6
Oats ℔ bushel 34lbs	1	0	@	1	1½
Pease ℔ bushels 60lbs	1	10½	@	2	0
Potatoes ℔ bushel	1	8	@	2	3
Beef ℔ lb		2½	@		3½
Beef ℔ 100lbs	15	0	@	20	0
Pork ℔ 100lbs	20	0	@	21	3
Chickens ℔ Pair	1	0	@	1	3
Ducks ℔ Pair	2	0	@	2	6
Geese ℔ Pair	1	8	@	2	0
Turkies ℔ Pair	2	0	@	3	0
Butter ℔ lb	0	7	@	0	8
Hay ℔ Ton	35	0	@	50	0

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,

Near the Toronto Necropolis, East of Parliament Street

N.B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

THRASHING MACHINE.

LETTERS PATENT.

Time and Labor Saved are Money Earned.

THE SUBSCRIBERS having secured to themselves the exclusive right of manufacturing and vending to others to use within the territory of Upper and Lower Canada,

SEVERANCE'S CELEBRATED IMPROVED HORSE POWER & THRASHING MACHINE one of the most valuable time and labour saving Machines ever devised by human ingenuity, respectfully inform the public that they have just completed a new and extensive Factory on Wellington Street, extending from Prince to George Street, which gives them more than double the accommodation they had in the old shops, which will hereafter, they trust, enable them to supply the whole farming community of the United Provinces with a Machine that will thrash and clean more grain in a day, with less expense and with greater cleanliness, than any other known invention—only requiring two horses.

We beg leave to say to our customers and friends, that we are again prepared to furnish those in want of Thrashing Machines with an article superior even to those heretofore manufactured by us.

Our long experience in making and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of work, and amount of it they can do, our Thrashing Machines are unequalled by any in use. And while the grain is thrashed clean and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill or any market.

All orders addressed to us or our Agent, WM. JOHNSON, will be promptly attended to.

Machines shipped to any port in Canada, and every one warranted to be as good as recommended.
Liberal terms of payment allowed.

B. P. PAIGE & CO.

Whereas, Letters Patent were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using or manufacturing any imitation article, as all infrigements will be dealt with according to the law of the land.

All genuine Machines will be accompanied by a Deed signed by B. P. PAIGE, the owner of the right, giving the purchaser the right to use or transfer the same. Without such a Deed no person will be safe in purchasing or using said Machines.

B. P. PAIGE.

Agent at Hamilton, Mr. Raswell Wilson.

Toronto, July 15th, 1851. 42-6m

CANADIAN AGRICULTURIST.

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR

VOL. III. TORONTO, NOVEMBER, 1851. No. 11

MEETING OF THE BOARD OF AGRICULTURE OF UPPER CANADA.

A meeting of the Board was held, pursuant to adjournment from July 4th, in one of the Committee rooms belonging to the Legislative Assembly, November 4th, 1851, at 11 o'clock, A. M. Present,—Hon. Adam Fergusson, E. W. Thomson, J. B. Marks, Sheriff Ruttan, R. L. Denison and the Secretary.

The Minutes of the last Meeting having been read and confirmed:—

1. It was moved by the Hon. Adam Fergusson, seconded by Mr. Sheriff Ruttan, that E. W. Thomson, Esq., be the Chairman of the Board for the current year. (Carried unanimously.)

2. *Resolved*, That the best thanks of the Board be presented to J. B. Marks, Esq., Chairman *pro tem*, for his zealous and valuable services.

The Secretary brought before the notice of the Board, a box of grains, consisting of various kinds, from different parts of the world, which he had received from Henry Houghton, Esq., the agent to the Canadian Commission at the great Exhibition in London, and presented by Mr. Houghton to the Agricultural Association of Upper Canada. The seeds were obtained from specimens Exhibited at the World's Industrial Exposition in London. The Australian wheat and barley are particularly bright and heavy. A portion of these grains are to be preserved in a collection or museum, that is about being formed in connection with the Board of Agriculture, and the remainder is to be sown in the Spring, by way of experiment.

3. *Resolved*, That the thanks of this Board be communicated to Henry Houghton, Esq., for his kind attention in forwarding the above mentioned seeds.

4. *Resolved*, That the Chairman and Secretary be authorised to procure a Gold Medal awarded to John Lynch, Esq., of Brampton, as an extra premium for an Agricultural Essay, in accordance with the 13th Resolution, passed at the annual meeting of the Provincial Agricultural Association, held at Brockville.

5. *Resolved,* That the Secretary be instructed to make such arrangements with the Committee of the Johnstown Agricultural Society, and the authors of the Essays that competed for the Society's prize, with reference to their publication, as may appear expedient and practicable. And in case the Board should adopt any of the Essays for publication, a Diploma be presented to the respective writer thereof.

6. *Resolved,* that three acres, at least, of the intended Experimental Farm be prepared for Hemp, Flax and Sugar Beet; that the ground be ploughed forthwith; and that the Secretary be authorised to communicate with the University Authorities on the subject, for the purpose of commencing immediate operation.

7. *Resolved,* That the Secretary of this Board address a Circular to the Presidents of the County Agricultural Societies in Upper Canada, inviting their attention to the requirement of the new Agricultural Acts, particularly in reference to the Election of two Members of the Board at their annual meeting in February; requesting also their co-operation in carrying out the objects of the Board, and their pecuniary aid towards sustaining the character and operations of the Provincial Association.

8. *Resolved,* That the Secretary communicate to the several County Societies the absolute necessity of transmitting to this Board the names of three persons each, who are competent to act as judges at the next Annual Show of the Agricultural Association; and that they be requested to make the selection at their Annual Meeting in February; and to designate, particularly, what department each is competent to act in; and that in the event of this request not being complied with at the time this Board shall meet after the first of April, they shall then take such steps as to them shall seem expedient to supply the necessay number of judges.

The Board adjourned at 4 oclock, to ten next morning.

WEDNESDAY, NOVEMBER 5th.

The Board met at 10 o'clock, A.M. Present, E. W. Thomson, Chairman, Hon. A. Fergusson, J. B. Marks, Sheriff Ruttan, R. L. Denison, and J. Harland.

The following resolutions were adopted:

9. *Resolved,* That the next exhibition of the Agricultural Association of Upper Canada be held in the City of Toronto, on the 21st, 22nd, 23rd, and 24th days of September, 1852; and that the Secretary be instructed to communicate the same to the Secretaries of the Lower Canada and New York State Agricultural Societies.

10. *Resolved,* That the Mayor of Toronto; the Sheriff and the Warden of the County of York; F. Widder, Esq., Commissioner of the Canada Company; and Professor Croft, Vice Chancellor of the University of Toronto, be in terms of by-law, members of the Local Committee for making the arrangements for carrying out the Exhibition.

11. *Resolved,* That the notice required by law be given with a view to make or amend such By laws as may be considered necessary at the next annual meeting of the Agricultural Association.

After considerable deliberation on various matters arrising out of the new Agricultural Statute, the Board adjourned until ten o'clock next morning.

THURSDAY, NOVEMBER 6TH.

The Board assembled this morning pursuant to adjournment at 10 o'clock, A.M. The same members present as on previous day. Mr. Sheriff Treadwell of L'Orignal, 2nd V.P. of the Provincial Agricultural Association, favoured the Board with his presence, and offered several valuable suggestions. The expediency of commencing the formation of an Agricultural Library in connection with the Board having been discussed, it was

12. *Resolved.* That the Chairman and Secretary of tho Board, with the Treasurer of the Agricultural Association and Hon. Adam Fergusson, be a Committee for commencing a Library, with authority to expend a sum nor exceeding £50 in the purchase of books; and to report theirproceedings at the next meeting of the Board.

13. *Resolved,* That the Secretary be authorized to purchase for the Library of the Board of Agriculture, the British Stud and Herd Books; the American Do.; and that blank books be procured for recording the pedigrees of Horses and the pure breeds of cattle in this Province.

14. *Resolved,* That 100 copies of the new edition of Mr. Hind's Lectures on Agricultural Chemistry, be purchased and distributed to the general County Agricultural Societies in the Province.

15. *Resolved*, That 500 extra copies of the *Canadian Agriculturist* for the present month, containing Mr. Sheriff Treadwell's report on the Agricultural, social, and industrial condition of Canada, be taken for gratuitous distribution.

A communication from Mr. R Wade, Jr., Cobourg was read on the expediency of distinguishing the prize animals and articles at the Provincial Exhibition as soon as ths prizes are declared:—a matter which the board agreed to consider and decide on, at its next meeting. Mr. Marks submitted a letter from the Middlesex Agriculture Society, intimating their intention of waving their claims to the Provincial Show till the completion of the railway, when London will expect the exhibition and be prepared to sustain it. This should have been noticed in connection with the proceedings of the annual meeting at Brockville, but was inadvertently omitted.

The Chairman and Secretary were authorised to make the necessary application and arrangements for procuring one of the vacant rooms in the Government Buildings for an office for the Secretary of the Board.

The Board adopted an arrangement with the Proprietor of the *Canadian Agriculturist* for the improvement and enlargement of that journal for the ensuing year, so as to include the transactions of the Board, and to keep down the charge for the paper to members of Agricultural Societies, to the present rate of half-a-dollar per annum; the entire editorial management to be in the hands of the Secretary of the Board.

The Board after talking over several topics of importanc, particularly those in reference to the proposed Experimental Farm on the University grounds, arrangements for the commencement of which will have to be decided on at the next meeting. It was

17. *Resolved*, That this Board adjourn to Tuesday, the 20th of April, 1852.

CANADIAN MANUFACTURING PROGRESS.

No. 1.

George Buckland, Esq., Secretary Provincial Agricultural Association.

My Dear Sir,—Allow me to call your attention to the following new branches of manufactures, specimens of which you had for the first time exhibited at Brockville, viz:—

W. A. Clark.—Sheep Skin Factory, at Toronto; Letter Herewith.

H. H. Date, Edge Tool Factory, at Galt; statement herewith.

Railroad Spikes, manufactured in Montreal.

Patent Waggon Boxes and Cast Iron Pumps, manufactured at the Brockville Foundry, by R. Colton.

I am, Your Obedient Servant,
J. LEWIS MACDONALD.

Gananoque, Oct. 1851.

No. 2.

Toronto, Sept. 27, 1851.

J. L. Macdonald, Esq., Gananoque.

Dear Sir,—Agreeable to your request, I herewith give you, (for the benefit of the Provincial Agricultural Association,) a statement of the capacity of, and the business done, by the Toronto Sheepskin Factory.

It was completed Nov 1, 1850, since which time it has been in active operation, and is now dressing an average of eighteen hundred skins per week; and gives employment to about 25 hands.

The manufactured articles, such as Shoe Linings, Bindings, Book-Bindings, Coach Linings, and Trunk Skins, have thus far found a market in the various towns in Canada. The wool, of which there has been pulled about 140,000 lbs., all went to New England for a market until the 1st of May last; since then the increase of machinery has made a steady home market for all suitable for clothing purposes, and none has been shipped from this establishment for a foreign market, except the long worsted wool.

While on the subject of wool, allow me to make a suggestion. I think a great injustice is done to our agricultural interest, by our commercial regulations with the United States. While wool coming into this country pays $2\frac{1}{2}$ per cent duty, all wool grown in this country and exported to the United States pays 30 per cent duty there. Now as we want some of their fine clothing wool, and they want our combing or worsted wool, would it not be well for the Provincial Agricultural Association to make an effort to bring about something like reciprocity in this article particularly?

Please accept my thanks for the interest you have taken in my manufacturing establishment, and with my best wishes for your health and prosperity, I am, Sir,

Yours, Respectfuly,
W. A. CLARK.

H. H. Date, Manufacturer of Edge Tools, Factory in Galt—Water Power.

Articles manufactured at the present time are,

1st. Chopping Axes.
2nd. Broad Axes.
3rd. Hand Axes,
4th. Hunter's Hatchets.
5th. Adzes.
6th. Chisels (carpenter's edge tools.)
7th. Cast Steel Augurs.
8th. Tin Smiths' Shears.
9th. Coopers' Edge Tools.

The future operations of the factory will comprise, in addition to the before mentioned articles, Forks, Hoes, Spades, Shoves, &c. Planes of all kinds.

L'ORIGNAL, 18 Sept., 1851.

JOHN B. MARKS, ESQ, President of the Agricultural Association of Upper Canada.

SIR,—In attempting to make a report to the Provincial Agricultural Association, I fear that I shall fail in accomplishing the task, from circumstances beyond my control, as I have not been furnished with any report from the experts in reference to the condition of crops for the present season; and having been absent at Toronto, for the purpose of advocating the Northern Line of Railway from Montreal to Kingston, from the time of seed-sowing until a considerable part of the harvest was gathered in, I am unable to speak from my own observation. I have, nevertheless, received from one of our best farmers the following note which I here transcribe:—

CALEDONIA, 18 Sept., 1851.

SIR—I forward you a notice of the state of the crops in this locality. It is that of one whose time and opportunities of extended observation is very limited. Grass is a most abundant crop, but the early part of the hay harvest was very rainy and there is some bad hay. Wheat is a heavy crop. But the early-sown wheat is injured by the fly. The farmers here must, we apprehend, depend for some time upon Black sea wheat, sown about the 25th of May. Barley, oats, and peas are a most abundant crop, and have been saved in good condition. Potatoes were early rusted, and there are some indication of rot. At best they must be but a scanty crop and of inferior quality. The season was too wet and cold for Indian corn, and it is late; but, if the present favorable weather for ripening it continues, it may be nearly an average crop. Turnips are an exceedingly good crop, and it is a favorable indication of the progress of agriculture, that the cultivation of this most excellent root is on the increase. I enclose you a letter of excuse to Mr. Buckland—please deliver it.

I am &c., signed, PETER STIRLING.

I owe Mr. Stirling an apology for making use of his name without his consent, but I feel that it is an act of justice to him that it should be known.

As I am about to retire from the Presidency of the Agricultural Society of the United Counties of Prescott and Russell, a situation which I have filled for the last twelve years, I think that it may not be improper to make some remarks that may be of service to Agricultural Societies generally. It is now twenty years since I first became connected with the Agricultural Society of the Ottawa District, since which period the limits which then comprised this District, including the Townships of Gloucester and Osgoode only, numbered 4,180 inhabitants in 1831, and in 1850 the number had increased to 16,602, being four-fold; and I feel confident that our Agricultural improvements have advanced in an increased ratio. I am happy to learn that my expectations as expressed in a letter to the Editor of the *Canadian Agriculturalist*, dated 21st of May, 1850, and published in the July number of the same year, have been more than realized in reference to the World's Grand Industrial Exhibition; and that the minerals taken to London by Mr. Logan, the Provincial Geologist, have been of the greatest possible service in bringing Canada under the favorable notice of the British Public. The wheat, peas, oats, and other grains raised in this country must elevate the Agricultural character of the Province, and our fire engines, blankets, cloths, hardware &c., must satisfy the good people of Britain that we have among us both mechanics and manufacturers that will soon be able to satisfy our wants.

It is with no ordinary degree of satisfaction that I perceive that the views expressed in several of my letters, written on the subject of Railroads, within the last four years are being realized in less time and in a more efficient manner than I could possibly have anticipated. During my stay at Toronto I had the pleasure of seeing several gentlemen from Nova Scotia, New Brunswick, and other of the Eastern Provinces, and from them I learned that the same enterprising spirit that has been evinced in this Province, has been fully sustained in the other Provinces situated between us and the Ocean. In adverting to the city of Toronto, I feel confident that it will bear a favorable comparison with any city of the same population in America; its population in 1850 amounted to 25,166 souls. It can boast its University with its beautiful grounds, a part of which has been appropriated for an experimental farm, and a Professor of Agriculture is about to be appointed, and an Agricultural Board has recently been established, which will be of the highest possible service to this Province. Upper Canada College has been for many years in successful operation. Knox's College and Toronto Acedemy, in connexion with the Free Church of Scotland, are making great and successful exertions to educate the youth entrusted to their care. The Congregational Institute under the able and pious instruction of the Rev. Adam Lillie, and the Normal and Model Schools that are training teachers, and introducing a system that will bestow the highest benefits on the rising generation are situated at Toronto, and are but in their infancy. The amount of good that will arise

from these institutions, if successful, will be of incalculable value. The Upper Canada College is the only one whose buildings are completed. The University has only one wing, and a building for anatomical purposes, yet erected, but they have the funds and are going on immediately with a splendid pile of building. The Legislature last year voted £15,000 for the purchase of grounds and the erection of edifices for the accomodation of the Normal and Model Schools, and a fine block of buildings are in progress for that purpose, and will probably be occupied this season. The Lord Bishop of Toronto is building a splendid college at the west end of the city, and, when completed, his Lordship will remove the Diocesan Institute from Cobourg to its new location. It has also been hinted that Victoria College, belonging to the numerous and respectable Wesleyan Methodist body, will also be removed from Coburg to Toronto. These, in ad lition to what Toronto now possesses, will render her the seat of learning for British America. Kingston can also boast of its two Colleges. The University of Queen's College, in connexion with the Church of Scotland, and the College of Regiopolis belonging to the Roman Catholics. Montreal can boast of its Protestant and Roman Catholic Colleges, and of as many Religious, Benevolent, and Charitable Institutions as any other city, of no greater number of inhabitants, in America. There are many other religious and literary institutions, to which I have not time to allude, scattered throughout the length and breadth of Canada. The splendid style of building displayed both in our public and private edifices, the regularity and spaciousness of our streets, and the neatness that is observed in cities, have been the admiration of American travellers; and it may not be amiss to observe, as far as Upper Canada in concerned, that in the attendance of day and Sunday school scholars, they bear a most favorable comparison with the neighboring States. (These remarks in reference to Sunday schools may with strict justice be applied to Montreal)

Facts of this kind, and statistics showing our rapid advancement, should be brought out and circulated under the sanction of the Government in countries from which we expect to obtain emigrants. Henry Youle Hind, Esq., Mathematical Lecturer, &c., to the Normal School, Toronto, has clearly shown that the soil and climate of the Canadian Peninsula, surrounded by the great Lakes, is the best agricultural country on the continent of America. This should be as widely known as possible; and we who inhabit the valleys of the Ottawa and St. Lawrence must claim for ourselves proximity to market, forests of timber, rich mines, and immense water privileges; so that Canada can accommodate the agriculturist, the mechanic, and the manufacturer with locations of the most favorable kind possible, and our natural resources only require to be made known, to secure to us emigration to an unlimited extent. It is contended that British America contains lands of the finest quality for agricultural purposes, to accommodate a rural population of fifty millions! There are prairie lands in the interior of our own possessions, on this contenent, equal to any of the prairié lands in the United States; and I have heard the remark made by gentlemen who have travelled through the Western States, that Canada will compare favorably with ary of the new States; and while they by no means blame the Americans for that *amor patriæ*, which they exhibit on many occasions, they think that we are far behind in making known the relative advantages of our own country. I omited to mention that while at Toronto, I visited the Lunatic Asylum, a splendid block of buildings situated on Queen Street about two miles and a half from the Market house (which last mentioned building does great credit to the Corporation of the City.) In visiting this institution it exhibits the utmost neatness and regularity in all its internal arrangements, and while from necessity, the parties are in confinement, every possible attention is paid to their wants; and every means resorted to for the purpose of securing their restoration to health and freedom. I also visited Her Majesty's Magnetic Observatory, under the superintendence of Captain Lefroy, R.A.F.R.S. The vibration or motion of the Earth is noted every instant of time, as well as its force, by the combined powers of magnetism and light. I would advise every gentleman fond of scienee to visit it for himself. I must not omit to mention Mr. Lesslie's Horticultural Garden, comprising about 60 acres, and situate about a mile below the River Don; such establishments must be of immense value to Canada. The Canada Company have done much to encourage the agriculture of the Province, and I am happy to say that they are increasing their exertions.

In adverting to the World's Grand Industrial Exhibition, I regret that the United States did not contribute more to it, although in many things, I rejoice to say, they have been highly successful. I fear that their immediate cause of dissatisfaction may be that the disagreeable differences that took place at the meeting of the Evangelical Alliance in London, in 1847, have induced them to keep back; or as they are young in manufacturing, they do not think that they could compete on equal terms; or they may not

wish to introduce into their markets those extra fine articles of sumptuous luxury, which the nations of the Old World must excel in, and which may be contrary to their notions of Republican simplicity: or they may consider it a free trade movement which they, knowing what is good for themselves, do not wish to participate in. It is highly probable that the Americans will have a grand Industrial Exhibition of their own, on the same principle as that established in France. His Royal Highness Prince Albert must feel the highest gratification that is possible for man to enjoy, in the unexampled success that has crowned his exertions in this splendid Exhibition; and Her Majesty, the Queen, must look upon the Crystal Palace and the scenes she has witnessed therein, as the proudest moments of Her life, and of Her reign; and it will form an era in British history of the most happy nature, and be looked back to with the highest degree of satisfaction by every inhabitant of Britain and her colonies. It is the grand turning point of convincing the world of the benefits of free trade, and of inducing other nations to adopt the principle; or it will induce the British Government to adopt the principle of a limited protection, to save her colonies and her agricultural population from destruction: as I doubt if other nations will not be induced to adopt the former course, it will render it necessary for Great Britain to adopt the latter one. There are strong doubts in the minds of many that the present prosperous state of the United Kingdom, is by no means owing to the doing away of protection. It is contended that the prosperity is owing to a series of good crops; to the facilities of communication by Railways; and to the indomitable spirit of Anglo-Saxon energy and perseverance. The security of Continental markets for the British manufacturer is extremely problematical, and the doing away with Colonial protection, has taught the colonies the lesson that they must manufacture for themselves. There may be persons in Britain that think colonies of no consequence to the Crown, and that the sooner they are freed from any dependence on the Imperial Government, the better; but I would doubt if there is any statesman who would rise in his place in Parliament and advocate such a policy. Let Great Britain throw off her North American Colonies in the year 1851, and before 1860, there would not be a colony remaining to the Crown; and from being the first nation on earth she would descend to a third rate power. I believe that we shall yet receive a healthy degree of protection from the Crown, and that the Anglo-Saxon race, and the Anglo-Saxon language, will carry the benefits of civil and religious liberty to the ends of the earth, and I believe that Great Britain and the United States, acting in concert, will effect this glorious object. When the Navigation and Corn Laws were repealed, there was an absolute necessity for the mitigation of the condition of the manufacturing and labouring men of the nation; this having taken place to the curtailing of the agricultural interest, it now becomes necessary to examine how far that interest may not be compelled to emigrate to other countries, where they receive a limited degree of protection.

In the present enlightened age when the greatest good to the greatest number is fully carried out, a proper respect should at the same time be had to the rights of persons and property, and while the labour of the nation is its bone and sinew, it must be admitted that the wealth and capital is the blood that gives it vitality, and circulates through the heart to and from its utmost extremities. Great Britain pays more taxes than any other nation, and an Englishman pays taxes with more grace than any other man, because he is aware that it is necessary to sustain the Government, which he feels a pride in declaring to be the best Government on earth; and under the wholesome administration of whose laws he feels that the rights of person and property are better protected than under any other Government; and that any political revolution would lessen their protection and render them less prosperous.

During the last two Sessions of Parliament the question of settling the currency of the North American Colonies has been keenly and ably debated. As an abstract question the decimal currency has much in its favour and few objections against it. When taken in all its bearings I have not sufficient information to venture an opinion; but when this subject is taken in comparison with that of protection, which has made Great Britain and the United States great nations, and the latter has proceeded with a rapidity unexampled in the rise of any other nation, it shows clearly that the subjects bear the same proportion to each other that the expense of keeping the account bears to the account itself, except in the depreciation of certain coins mentioned in the statute. The duty paid on our grain, cattle, and lumber passing from our own to a neighbouring country, should be removed. In my last report, I adverted to the policy of the American Cabinet, and to the correctness of that policy, so far as they were concerned, and the opinion then expressed has been fully sustained by the action of Congress. Much agricultural wealth is being withdrawn from the British Isles, and more will follow for the want of protection. It has been clearly shown that we have the climate, soil, and form of Government for these emigrants; but these facts are not sufficiently

known, and there is no country where their money could be immediately invested with the same safety and advantage through the medium of Loan Offices, as in this country, as the Banks are prohibited from succouring the farming interest. When the Bank of Upper Canada stood alone in Upper Canada, it accommodated the agricultural interest of the country by discounting paper payable by five instalments, so that the farmer could safely go to the Bank for accommodation for his seed, and even to buy cattle and fatten them and get the money to replace it by their sale. But when other Banks came into operation, it was prevented them from acting with the same degree of liberality that they had formerly done. By introducing British capital it would prevent the necessity of increasing the number of Banks, a policy of a doubtful nature.

When an additional hundred pounds per annum was recommended for each County Agricultural Society, I suggested that it should be expended as follows: Fifty pounds of the first year's grant for the purchase of an agricultural library, and the like sum of fifty pounds be expended in purchasing and distributing choice seeds throughout the country. That the sum of one hundred pounds be expended in premiums for the encouragement of horticulture for the second year; and for the third and following years, the sum of one hundred pounds be expended in encouraging the improvements of the breeds of cattle, horses, sheep and swine; but the appropriation had been made before the suggestions were received, and I regret to find that the £100 was struck out, and that the act was restricted to last year's amount. I had, previously to making this application, petitioned the legislature for a grant of fifty pounds for each constituency, for the purpose of purchasing an agricultural library to be established in each county, provided that before claiming such boon, they should establish a seed store and agricultural warehouse for the sale of agricultural implements of the most improved kinds.

In conclusion I beg to remark that the experimental farm in connexion with the Agricultural Board, will be of the greatest possible advantage to the Province at large, by fairly testing the relative advantage of deep, shallow, and medium ploughing; thick, thin, and medium seeding; early, late, and medium sowing; and by introducing and testing all kinds of grains and grasses as well as roots of every description. And it is to be hoped that the science of horticulture will meet with that attention to which it is justly entitled. The model farm that is to be attached to the Normal and Model Schools will be of incredible advantage to the students of that Institution.

I am happy to learn that the Agricultural Association of Lower Canada have made arrangements with Alfred Pensinnault, Esq., a French Canadian gentleman, to induce him to allow his splendid establishment at St. Philippe, near Laprairie, to to be occupied as a model farm for the Eastern Section of Canada; I regret that I have not had the pleasure of visiting it; but I am informed that there is nothing that can compare with it in any section of Canada, and it may be doubted if there is any establishment on this continent, that can do so not in point of extent, but in the style of its internal arrangements and the manner in which it has been conducted.

I beg pardon for the length of this report, but before closing I wish to say that since it was written I have visited Boston, and from what I have seen, there can be no question but that the Americans have learned from the celebrated Dr. Franklin that time is money and that economy is wealth; and they are also fully aware that knowledge is power, and the combination of these, under the blessing of God, have made them a great people.

When so much has been said with strict justice and without flattery in favour of our neighbours, let us now turn our eyes to our own country and examine its position; let us contrast its present state with what it was at the commencement of this century. At that time it was little known and less valued, and it scarcely contained a tythe of its present population. I am now writing without statistics before me, but if the census of Canada was carefully taken it would be found to contain within its vast bounds about 2,000,000 of people. Should not every Canadian without reference to origin, be this the land of his birth or of his adoption, feel a pride in its advancement. At that time the climate was set down as being the same as Greenland, now a large proportion of it is found to be the best agricultural climate and soil on this continent, of which Great Britain at this moment holds about one half, and Canada can boast of having here constructed by the energy of her sons the most magnificent canals that the world has ever seen, and the people of Canada and the people of Britain are projecting an iron road to connect the Atlantic with the Pacific through British territory, and make it with British capital and by British subjects. This, and this alone, will develope the value and extent of the British possessions on this continent, consisting of immense tracts of arable land; forests of valuable timber to an unlimited extent; inexhaustible mines of iron and coal, together with rich mines of copper, lead, plumbago, &c., &c., and with the finest harbours and fisheries in the world, and with water privileges that will not be fully improved to the end of time. Colonies

possessing these advantages must be highly esteemed by the Mother Country, as an outlet for her surplus population, and as a field for the employment of her redundant wealth; and furnishing in many instances the raw material for her operatives; and all that is required to command the highest degree of prosperity in a system that shall combine a moderate and judicious protection together with steady and permanent legislation.

CHAS. P. TREADWELL,
President of the Agricultural Society of the United Counties of Prescott and Russell.

THE VENTILATION OF BUILDINGS.

To the Editors of the Canadian Agriculturist.

GENTLEMEN,—

It is an old aphorism that "those that know nothing, fear nothing;" and because "we live as long as our neighbours," we do not comprehend the anxiety and interest which have lately been manifested upon the subject of ventilation.

Mr. A. Downing, who in connection with his excellent work on the "Architecture of Country Houses" says "The want of attention to ventilation arises from the fact that the poison of breathing bad air is a slow one, and though its effects are as certain as those which follow from taking doses of Prussic acid, yet they are only observed remotely, and little by little.

When a man is hungry, and thirsty, nature compels him to cry out for food and drink; but she does not so urgently protest againstly impure air; although a man in the one case may live several weeks without food, whilst in the other, no one has ever been known to live three minutes without air.

Whilst we go on from day to day suffering the accumulated evils resulting from our ignorance, and wondering at our want of physical health and spirits, we yet do not act, because we do not see our *neighbours* taking precautions against these evils, we are, in fact, content to "live as long as our neighbours."

It is a well ascertained fact that a healthy man takes into his lungs nearly sixty hogsheads of atmospheric air every twenty-four hours, which air, when expired, is so vitiated that but a very small portion of the vital principle is left. Now, if we add 100 per cent. to this vitiated atmosphere for that which is rendered impure by cutaneous transpiration, and the cumbustion of lamps and candles, and multiply the product by 10 (the number of inmates in an ordinary family), we will have the enormous quantity of more than a thousand hogsheads of air consumed by one family during twenty-four hours! Now let us take one of our best built houses heated by stoves, with, perhaps, two or three fire-places, but these carefully closed up by "fire boards," and calculate the quantity of fresh air which circulates through this building during 24 hours of our coldest zero days and nights in winter, when every atom of external air is, as far as possible, excluded, and then some estimate may be formed of the great deficiency, and dreadful state of the atmosphere in which we in general live during our Canadian winter of seven or eight months.

"It has been well remarked" Mr. Downing says "that if the air, as it comes from the lungs, impure, and robbed of its vital principle, were thrown off coloured, so that it would not mix with the common air of a room, but remain visible to the eye, the impression that would be made upon the mind to the presence of the large source of disease would be so strong that the first of all invariably acknowledged duties for the preservation of health would be ventilation." It is only because bad air is invisible to the eye, and we are consequently unconscious of its presence, that so much indifference to ventilation is manifested. It is true that upon entering a room immediately from the fresh air, we are conscious of an *unusual* smell; but the olfactory nerves are so delicate, and so soon blunted, that in less than one minute we become wholly unconscious and indifferent to it; the poison is, nevertheless doing its work with every breath we draw.

If people would but reflect and reason upon this subject, there would be no further necessity of enforcing it by writing. Why do we die if our breath is suspended but for one or two short minutes? It is because the blood must be kept pure and thin, or, such is the substance of its constitution and operation, that it would cease to flow through the inconceivably small channels which conduct it through every particle of the flesh from the crown of the head to the sole of the foot; and, when it ceases to flow, there the flesh must putrify. The air is, we all know, the only agent which will keep the blood thus pure, and enable it to circulate, and impart the vital property to the system. The atmosphere no less sustains life by imparting this wonderful property to the blood, than by its supplying the place of the miasm, if I may so call it, which the veins collect, and bring back to the lungs for expulsion, and which miasm, if left in the system for but a very few moments, would cause immediate death. Now if we further reflect that if the air is loaded with any admixture, such as the expired

breath, or emanations from the skin, or its natural proportions in any way deranged, and that it cannot be breathed without producing injurious results, we must see that the air within our dwellings ought to be constantly and rapidly removed, and pure air substituted.

Mr. Downing says, referring to the enormous quantity of air required by man in order to sustain health, that "it is to vitalize and purify the blood. The human lungs are the apparatus by which this process is effected, and the atmospheric air is the agent that performs the work. In each of there two lungs there are one hundred and seventy two millions of air cells, and every time breath is drawn in, the air passes down and fills these little air cells. On the other hand the blood is always going and returning to and from these air cells which compose the lungs; and in the short space of time that it remains there—only a moment—it is entirely changed in its appearance and character. That is, it comes into these air cells of the lungs, impure, and of a purple colour, from the veins, and after having been submitted to the action of the air, goes out of the lungs red, pure, and bright, through the arteries. The arteries immediately distribute again, to all parts of the system, the purified blood, which as it goes through the system, imparts warmth, strength, and life; and by the time it is poured into the veins on its return course, it becomes quite dark and impure again; and this process, when repeated, is what is called the circulation of the blood."

Now it is exactly in proportion to the purity, and also the *quantity* of air with which we keep these one hundred and seventy two millions of air cells distended that we shall enjoy health;—hence the coustant advice of the physicians to take "open air exercise." This "exercise," however, in no wise contributes to our health except as a means to an end. It carries a quicker action in the lungs which by this means have the advantage of a greater quantity of air, causing a proportionate purity of the blood and consequently its more rapid motion. Why is it that most people are *right handed?* Because the right lung is the largest and imparts to that side of the body greater strength. All animals, as a general rule, whose lungs bear the largest proportion to their bodies are the strongest. If health and strength, therefore, be so dependent upon *quantity* of air, how much more important to us must be its *quality.*

Our senses of sight and smell have not been given to us for nought; and althoug they are not so subtle and acute as would render us miserable, and not, perhaps, answer the ordinary purposes of life, yot we must take it for granted, that the Giver, having also vouchsafed to us *reason*, intended that they should be sufficient for us. And so they are sufficient guides for us even upon the matter in hand. We frequently *see* the fog of filth and dust which we are breathing in a room covered with a woollen carpet, yet we disregard it the very moment we so far alter our position with respect to the rays of light, which revealed the enormity to our sight, as to prevent our being sensible of it! Now, if we would but allow our reasoning faculties to have fair play, you would see polished floors or well kept oilcloths substituted for these nuisances, woollen carpets. So also with respect to the sense of smell:—reason would teach us that if upon stepping into a house or room we were sensible of an odour different from the external atmosphere, there was something wrong. But no: half a-dozen inspirations render us insensible to it, and all is right! As the gardener cannot smell the *rose*, nor the Southern wood-chopper the *magnolia*, so we, after a few minutes' delay, are insensible to the disgusting odour of our unventilated room!

Liebig, whose authority in these matters will not be doubted, will tell you that all diseases are communicable by infecction or contagion—that some of them will remain for years in clothes or garments of any kind—that chests, trunks, boxes, *rooms, closets, and houses* after lying unused or unoccupied for years will communicate disease. And all this merely from the effects of the breath or emanations from the bodies of diseased persons who formerly inhabited them. Can any one doubt then that the very best kept dwellings, unventilated, the floors covered with woollen carpets, the windows and beds hung with stuff curtains, and the walls covered with paper, in a few years become saturated with putridity, and redolent with disease?

As a corroboration of the assertion that not only the furniture, but the very wood and walls,—in fact the whole inside of a dwelling, becomes impregnated with the breath, follow a family into a new domicile, and the very same odour will soon become apparent. Indeed it is not difficult to distinguish the kind of disease with which a family may be affected, so palpable sometimes is the effect of the miasm in the building. I find it in walking along the road or street, the easiest thing in the world to distinguish a healthy from an unhealthy house. Wherever you see a small dwelling with four, five, or six good large chimneys, then you may depend they pay small doctor's bills in comparison to those who have but one or two 9 × 14 inch flues.

People in general do not reflect upon the danger of "taking" a dwelling which may have been

for some time shut up, or one which has been inhabited by an unhealthy family. I have observed that in many instances the new occupants would be taken down with fevers. Indeed no person of reflection will ever take such a house in the present state of ventilation in this country. A house properly ventilated, however, may stand for years shut up, and be in a purer state than when occupied.

But the most fruitful source of disease in our unventilated dwellings is our cellars.

If upon taking up our quarters in a public or a private house, we should be put in a room situated over a heap of dead carcasses in a state of decomposition, we would be astonished; but this would be something worse, in *degree* only, than the state in which we actually do live. Our cellars are the receptacles of, and, the year round, filled with meat, fish, lard, butter, vegetables, and all sorts of other edibles, and no one will deny that putrefaction is always going on in these articles, and to such a degree, frequently that it is capable of being detected even by the sense of smell.

Liebig says that "the particles of miasm from cold meat alone, in a state of decomposition are capable of communicating consumption! We fancy that our floors are a protection against this manufactory of foul air, but this is not so; all the lathing, and plastering, and floors which it is possible to interpose will not prevent this subtile poison from pervading every room in your house to the very attic, especially where you have woollen carpets and fire-places above the cellar,—the one facilitating its flow through the millions of pores of the flooring by capilary attraction, and the other by a direct suction or draught upwards from story to story of your house.

But what must we think of the intellect of people, who, in addition to this poisoning by inches, go into the thing at wholesale by actually supplying a hot air stove, with the air from the cellar heating it, (which renders it ten times more virulent) and forcing it up into every room in a dwelling!!! A few, fancying themselves a good deal wiser than their neighbours do bring a few square inches of the *external* air, taken from the surface of the ground, to their hot air stove. This practice is little better than the other; for here they get pure carbonic acid gas—especially at night, and during calm weather. Providence has ordered that this portion of the atmosphere should be heavier than any of the others in order that vegetation may have the full benefit of that which is its very life; and the fact is notorious with scientific men, that so near the density of water does this become that it can, at times, be poured out of a tumbler. And this is the material with which many respectable and intelligent men fill their dwellings!!! So that besides this miasm engendered in your cellars, generated by the decomposition of all these edibles, they are the receptacles of constant streams or carbonic acid gas pouring in at the windows.

To the breathing of this destructive matter may fairly be attributed more than half the disease that flesh is heir to—certainly all those of a pulmonary and cutaneous nature, whose origin is the impurity of the blood.

From its greater gravity this portion of the atmospheric air is always found near the surface of the earth, and every cave, well, hole, and nook is filled with it, as also every part of every building, which is so situated as to lie beyond the influence of winds and other motion of the air—such as cellars—between joists, and hollow walls, &c. As proof of all this, witness the numberless instances of deaths from descending into wells and mines. So filled is the space between the joists of any dwelling with this gas that it will immediately extinguish a candle. It is a well authenticated fact that all our Indian tribes are scrofulously affected, from the oldest to the youngest, and a great majority of them die of consumption; what but the breathing of this fluid,—lying, as they do, upon the earth, causes this contamination of the blood? A disease called Elephantiasis—a species of leprosy, I believe, has, for generations out of mind, affected the inhabitants of Labrador, and indeed part of New Brunswick.

These people burrow in the earth! What causes scurvey on board of ships but the breathing of the air within their holds? It is but now that we have the awfully appalling account that three-fourths of the population of ——— the Canary Islands have been swept away by cholera Can any one doubt that sleeping in the open air, as they do, amongst their grape vines, which must, from their luxuriance, attract, so great a quantity of carbonic acid gas, is the cause of this unheard of mortality? I have no doubt at all that the breathing of this gas, is the immediate cause of cholera. We all know that elevated situations are more healthy than low ones—and that this disease is, as a general rule confined to the latter. Who can doubt this after one moments reflection upon the course which the cholera took in 1832 and 1834 up the valley of the St. Lawrence and down the valley of the Mississippi and its tributaries, in which latter localities it remains to this day committing its greatest ravages in the lowest flats and in the most populous towns. If the inhabitants of this great valley from St. Louis to New Orleans would but ventilate their dwellings with air from strata

twenty feet above the level of the surface of the ground, or if they would live, or even sleep in the upper part of their houses during the hottest season, they would find great relief.

Now if this be true that the immediate surface of the earth is, as a general rule, covered with air destructive to man, how can any one of intelligence any longer permit his dwelling to be cursed with hot air machinery? If you have a cage of birds in a room heated in this way, they languish and die; flowers will wither and decay; the members of the family will very soon complain of headaches and coughs preceded by a dryness of the throat and very frequently bowel complaints. In short, it is a species of suicide, and that not confined to the present generation unfortunately, but laying the foundation for a line of diseased offspring, providentially not a long one.

The simple remedy for all this evil is merely a little variation in our mode of building, so as to ventilate our dwellings with air from strata 8 or 10 feet from the surface of the ground in this part of North America, ensuring a constant circulation of about fifteen hundred cubic feet of air per minute through an ordinary dwelling house. This is an operation so simple that the most stolid mechanics cannot fail to understand it after seeing it once done.

I would cheerfully here give a description of how the building is to be put up, but it is not possible to do so by writing; nothing but drawings and models will be sufficient adequately to convey the mode of operation, simple as it is, to the understanding.

I do not object to fire-places or stoves, *but then there must be ventilation with them*, and the ventilating air must, in cold weather, be warmed, not heated, be carried off downwards, and circulate between the joists of the first floor. Thus the cold, nine-tenths of which comes into our lower rooms from under the base, and through and between the floor boards, is kept *below the floor*, the floor is warmed by the departing warm air, the miasm of the cellar can never reach the inmates of the house; the dust of carpets is kept below breathing distance, and also carried away under the floor, and the building kept warm with half the fuel that would be necessary for an upward ventilation.

But then a house must be built for it. This is so simple that it will entail little or no greater expense than our ordinary mode of building. All that is required is that it must be understood. The Architect should be able to make a house breathe, and must understand its physiology as a surgeon does that of the lungs of a human being. It is to be hoped that some of our Architects will, ere long, muster sufficient energy to shake off the thraldom, in which they are held by their old musty rules in defiance of all science and even common sense, and boldly adopt a system of building which will ensure health, as well as ornament, which is but of secondary importance.

Upon a matter of so much consequence it is strange that none of our public functionaries have taken the trouble to make enquiry into the subject of ventilation, which is just now engaging the attention of so large a portion of the North American public. I say North American, because it is in cold climates where the ventilation of buildings is most required, and where, consequently, enquiry upon that subject will naturally commence.

So alarmingly great has the mortality in our public places of confinement become that it has, upon several occasions, called forth the animadversions of the *Press*; yet no effort appears to be making to meet the evils of a putrid atmosphere in which the unfortunate inmates are literally smothered. Our Normal and Common School houses too, I believe, are to be heated upon the "hot air principle". All I can say to this is to advise every parent, who has any regard for the health of his children, to keep them away; much better that our offspring should have health without education than education without health.

I am, Gentlemen,

Your obedient servant,

H. RUTTAN.

Cobourg, 1st Nov. 1851.

THRASHING MACHINES IN AUSTRALIA.

A letter from Australia mentions that for two or three years, at least, a machine has been in use for thrashing the grain out of the standing corn without waiting for the usual process of reaping. The letter says—"We have taken off all our wheat crop, forty acres for myself, and about forty-five acres for Alexander, and fifty-two acres for others, with two teams of bullocks, eight each, one man to steer, and two boys to drive. We can reap and thrash eight or nine acres per day, in good, hot weather; it is certainly an excellent machine for such a climate as this. We paid £70 for the machine. There are light machines made for horses, but ours is a strong, substantial article, and is drawn by bullocks and a chain attached to the near corner. There is a comb in front of about 4½ feet wide, the teeth of which are only wide enough to take in the straw below the ears; a drum works on the back end of the comb, thrashing out the wheat, and throws it into the machine. We keep the winnowing machine going at the end of the field, and by this means we have the wheat ready for the market at once. The straw, of course, is left in the field, but that is not much regarded in this country; most people burn it, but when the weather is very hot and dry it can be easily harrowed off."

The New Agricultural Bill.

AN ACT,

To provide for the better organization of Agricultural Societies in Upper Canada.

[August 30th, 1851.]

Preamble. Whereas by an Act of the Legislature passed during the now last Session, provision was made for the esstablishment of a Board of Agriculture in Upper Canada; And whereas to enable the said Board to accomplish the objects for which it was established, it is necessary to reorganize the Agricultural Societies of Upper Canada, and to provide a uniform system for their more efficient working: Be it therefore enacted, by the Queen's Most Excellent Majesty by and with the advice and consent of the Legislative Council, and of the Legislative Assembly of the Province of Canada constituted and assembled by virtue of and under the authority of an Act passed in the Parliament of the United Kingdom of Great Britain and Ireland and intituled, *An Act to re-unite the Provinces of Upper and Lower Canada*, and for *the Government of Canada*, and it is hereby enacted by the authority of the same.

8 *Vict. c.* 54. *repealed.* That the Act of the Legislature passed in the eighth year of her Majesty's Reign, intituled, "*An Act for the encouragement of Agricultural Societies and Agriculture in Upper Canada*," be and the same is hereby repealed.

COUNTY SOCIETIES.

County Societies how organized. II. And be it enacted, That a County Agricultural Society may be organized in each of the Counties of Upper Canada, whenever fifty persons shall become members thereof, by signing a declaration in the form of the Schedule A, to this Act annexed, and subscribing each not less than *five shillings* annually to the funds of the said Society.

Objects of County and of Branch or Township Societies. III. And be it enacted, That the object of the said Societies, and of the Township or Branch Societies in connection therewith, shall be to encourage improvement in Agriculture, by holding meetings for discussion, and for hearing lectures on subjects connected with the theory and practice of improved husbandry; by promoting the circulation of the agricultural periodicals published in the Province; by importing or otherwise procuring seeds, plants and animals of new and valuable kinds; by offering prizes for essays on questions of scientific inquiry relating to agriculture; and by awarding premiums for excellence in the raising or introduction of stock, the invention or improvement of agricultural implements and machines, the production of grain and all kinds of vegetables, and generally for excellence in any agricultural production or operation; and also by the acquisition and cultivation by any such County Society of a model Farm, if deemed advisable by such Society, and it shall not be lawful to expend the funds of the Societies, derived from subscription of members, or the public grant, for any object inconsistent with those above mentioned, and that the directors of every such County and Township Society shall have full power from time to time to make, alter, and repeal By-Laws and rules for the regulation of such Society and the carrying out of its object.

Annual meetings, and officers. IV. And be it enacted, That the said Societies shall hold their Annual Meetings in the month of February in each year, and shall, at such meeting, elect a President, two Vice-Presidents, a Secretary and Treasurer, and five Directors.

Presidents of Township Societies to be Directors. V. And be it enacted, That the Presidents of the several Township Agricultural Societies, within the County, shall in addition to those before mentioned, be *ex officio* Directors of the County Society, and the said officers and Directors shall and may, for the year next following the annual meeting, exercise all the powers vested in the County Society by this Act.

Meetings how called, &c., VI. And be it enacted, That the meetings of the officers and Directors shall be held persuant to adjournment, or called by written notice to each, to be called by authority of the President or in his absence the senior Vice-President at least one week before the day appointed; and at any such meeting five shall be a *quorum*.

Annual report to be made and what it shall contain. VII. And be it enacted, That the said officers and Directors shall, in addition to the ordinary duties of management, cause to be prepared, and shall present at the Annual Meeting, a report of the proceedings during the year, in which shall be stated the names of all the members of the Society, the amount paid by each set opposite his name, the names of all persons to whom premiums were awarded, the amount of such premiums respectively, and the name of the animal, article or thing in respect of which the same was granted, together with such remarks upon the agriculture of the County, the improvements which have been, or may be made therein, as the Directors shall be enabled to offer. There shall also be presented to the said Annual Meeting, a detailed statement of the receipts and disbursements of the Society during the year; which report and statement, if approved by the meeting, shall be entered in the Society's journal, to be kept for such purposes, and signed by the President or a Vice-President, as being a correct entry; and a true copy thereof, certified by the President or Secretary for the time being, shall be sent to the Secretary of the Board of Agriculture, on or before the first day of April following.

Statement of accounts.

Report and statement when approved to be sent to the Board of Agriculture.

County Society to receive and transmit reports of Township Societies. VIII. And be it enacted, That the County Society shall receive the Reports of the Township or Branch Societies, and shall transmit them, along with its own Report, to the Secretary of the Board of Agriculture, with such remarks thereon as may enable the said Board to obtain a correct knowledge of the progress of agricultural improvement in the County.

Officers and Directors to answer queries of Board of Agriculture. IX. And be it enacted, That it shall be the duty of the said officers and Directors to answer such queries, and give such information, as the Board of Agriculture may, from time to time, by circular letter or otherwise, require, touching the interests or condition of agriculture in their County; and generally to act, as far as practicable, upon the recommendations of the said Board.

TOWNSHIP SOCIETIES.

Township Societies how organized. X. And be it enacted, That a Township or Branch Agricultural Society may be organized in each Township of any County, or in any two or more Townships together, whenever a sufficient number of persons shall become members, by signing a declaration in the form of the Schedule A, to this Act annexed, and subscribing, each, not less than *five shillings* annually to the funds thereof, to raise an aggregate amount of not less than *seventeen pounds ten shillings.*

Annual meetings, and officers. XI. And be it enacted, That the said Societies shall hold their Annual Meetings in the month of January in each year, and shall elect a President, Vice-President, Secretary and Treasurer, and three or not more than nine Directors.

Annual report to be made. XII. And be it enacted, That the said officers and Directors shall prepare and present to the Annual Meeting of the Society, a Report of their proceedings during the year, in the same manner as hereinbefore directed for County Societies, and containing information under the same heads, and shall transmit a true copy thereof, certified by the President or Vice President, to the Secretary of the County Society, in time for the annual meeting thereof in the month of February.

GENERAL PROVISIONS.

Exhibition may be held in any Township having a Society. XIII. And be it enacted, That when a County Society and Township Societies are organized in any County, it shall be lawful for the Directors of the County Society, if they think proper, to appoint the Exhibition of the County Society to be held in any Township in the said County; and the Society of the said Township (or, if such Township be united with another or others, to form a Society, the Society of such Townships,) shall not hold a show for that year, but the same shall merge in the exhibition of the County Society, and the funds of the Township or Branch Society, for that year's exhibition, shall be paid over to the Treasurer of the County Society; Provided that the said Township or Branch Society shall not forfeit any right to a share of the Public Grant for not making a full report for such year.

Proviso.

Government grant to be paid to any County Society on certificate of Secretary of Board of Agriculture. XIV. And be it enacted, That when the Chairman and Secretary of the Board of Agriculture shall certify to the Governor of this Province, that any County Society has sent to the said Board Reports and statements as required by this Act, for the year then last previous, and also certify that the Treasurer or other officer of the said Society, has transmitted to the said Board an affidavit (which may be in the form of the Schedule B, to this Act annexed, and may be sworn to before any Justice of the Peace, who is hereby authorised to receive the same), stating the amount subscribed for that year, and paid to the Treasurer of the County Society by the members thereof, and by the several Township Societies of the said County, it shall be lawful for the Governor to issue his warrant in favor of such County Society, for a sum to be taken out of any unappropriated moneys in the hands of the Receiver General, equal to three times the amount appearing by the said affidavit to be then in the hands of the Treasurer: Provided, that no grant shall be made unless *twenty-five pounds* be first subscribed and paid to the Treasurer; and provided that the whole amount granted to any County Society shall not exceed *two hundred and fifty pounds* in any year, and provided also that it shall not be necessary that any County Society should have sent Reports and statements as above mentioned to the Board of Agriculture in order to enable such Society to obtain the Government allowance under this section for the present year 1851, nor shall it be necessary in order to enable any County Society to obtain such allowance for the first year, in which it shall be established that it should have sent such reports and statements to the said Board for the previous year, but it shall in either of the said cases be sufficient that such Society has complied with the other requirements of this section.

Proviso: *amount limited.*

XV. And be it enacted, That every Township or Branch Society, organized according to this Act, and sending a Report of its proceedings to the County Society as hereinbefore required, shall be entitled to a share of the grant to the County Society, in proportion to the amount which shall have been subscribed by the members of such Township or Branch Society, and deposited with the Treasurer of the County Society, on or before the first day of May in each year: and the sum so deposited by any Township or Branch Society shall be repaid, along with its share of the public grant, so soon as the said grant shall have been received by the County Society; Provided always, that not more than one-half of the sum granted to any County Society shall be subject to division among Township or Branch Societies.

Share of Township Societies regulated.

Proviso.

XVI. And be it enacted, That the Treasurer or other officer of any County, Township or Branch Society, who shall certify that a subscription, or any sum of money has been paid to him for the Society, when it has not been so paid, or who shall pay back any such subscription before the public grant is divided, shall forfeit and pay to Her Majesty the sum of *ten pounds* for every such offence, and shall be guilty of a misdemeanor.

Penalty on officers certifying untruly.

XVII. And be it enacted, That for, and notwithstanding any thing in the tenth section, or any other part of the Act passed in the now last session and entituled "An Act to establish a Board of Agriculture in Upper Canada; the Vice President, or in his absence the Secretary or Treasurer of any County Society, may, in the absence of the President of such County Society, act in his stead as a Director of the Agricultural Association of Upper Canada.

Section 10, of 13 & 14 Vict. c. 73, amended.

XVIII. And be it enacted, That it shall be lawful for the Municipal Council of any County in Upper Canada, from time to time, if they see fit, to grant aid from the County Funds to the Agricultural Association of Upper Canada.

Aid from the County funds.

XIX. And be it enacted, That the said Board of Agriculture, and the several County Societies organized according to the provisions of this Act shall be and become bodies corporate with power to acquire and hold land, and personal property and to sell, lease, or otherwise

Corporate powers.

dispose of the same, provided that the real estate to be held by the said Board shall at no time exceed in value the sum of *five thousand pounds* and the real estate to be held by each of the said County Societies shall at no time exceed in value the sum of *one thousand pounds.* *Amount of real estate.*

Word "County" interpreted. XX. And be it enacted, That the word "County" in this Act shall mean and include union of Counties.

SCHEDULE A.

We, whose names are subscribed hereto, agree to form ourselves into a Society, under the provisions of the Act of the Legislature, (*Title and date of this Act,*) to be called the "County (*Township or Branch, as the case may be,*) Agricultural Society of the County of " (*or* Township of) and we hereby severally agree to pay the Treasurer yearly, while we continue members of the said Society, (any member being at liberty to retire therefrom, upon giving notice in writing, at any time before the Annual Meeting, to the Secretary of his wish so to do) the sums set opposite to our respective names, and we further agree to conform to the rules and by-laws of the said Society.

NAME.	£.	s.	d.

SCHEDULE B.

County of } I, A. B., of the Township of
to wit: } Treasurer of the County Agricultural Society of , make oath and say, that the sum of has been paid into my hands since the first day of February last, by the Township Agricultural Societies of the said County, as and for the members' subscription for this year; and the sum of has been paid into my hands, as subscriptions for this year, by members of the said County Society; and that the said sums, making in the whole sum of , now remain in my hands, ready to be disposed of according to law.

A. B.

Sworn to before me this day of A. D. 185 .
Justice of the Peace for the County of

STEAM PLOUGHING.

A further experiment was privately made on the Grimsthorpe Estate, near Bourne, on Thursday last, of the possibility of adopting the power of steam as an instrument in turning and pulverising the soil. The field selected for the purpose had grown a wheat crop, and was of good malleable soil. The engine—a beautiful piece of machinery—was placed on a moveable tram road at the end of the field. By way of testing the relative powers, the plough, a double one, with reversed shares and coulters, was drawn in one direction by horses, and contrarily by steam. The horses, four very powerful animals had much labor to drag the implement, and that only at a very slow pace; whilst the engine of 26-horse power, hurried it back as fast as a man could fairly walk to conduct the plough. After several "bouts" a subsoil plough was attached, at gauge of 9 and afterwards 12 inches. This additional burden, which the horses could not possibly have drawn, evidently steadied and improved the motion, and left the work in a most satisfactory manner. Harrows were afterwards appended with an equally pleasing result.—The ploughing took place across old land, which showed in some places consiperable dips. Two engines placed parallel at each end of the field, without difficulty, with only a double plough, complete four acres of land in ten hours, and, if required, subsoil it too. The work is more effeetively performed, for it must be borne in mind that land ploughed by steam has this great advantage—that there are no indentations or basins left as when ploughed by horses (from the feet), a matter of great importance on clay soils, and where subsoiling is required, an advantage that cannot be too highly appreciated. The plough used on this occasion was designed and manufactured by an ingenious mechanic named Downes, living at Ryhall, near Stamford, who has for some years deservedly been held in esteem as a ploughman and ploughmaker, in the midland counties.—*Stamford paper.*

THE ILLUSIONS OF A CUP OF TEA.

The tea-table, that charm of gossip and talk, the very cup itself which we are so often told "cheers but no inebriates," are not sacred from the invasions of rascally compounders, and when we fancy we are sipping our souchong the probability is that we are drinking essence of beech, elm, horse-chesnut, plane, fancy oak, willow, poplar, hawthorn, or sloe leaves, for all of these, in their turn, do we fill our caddies. In 1843 there were no less than eight manufactories in London, and as many in the provinces; but the excise grew very active and put most of them down. The leaves were brought up at coffee-houses at 2½d. per lb., mixed with a solution of gum, re dried, and then coloured with rose pink and black lead to "face" them, a bloom being sometimes also imparted with a vegetable red mixed with carbonate of lime. But though there not so much ingenuity now exercised in the home market, we are not a whit the safer, for the Chinaman, with his pigtail is just as great a rogue as his barbarian brother in England. Out of thirty-five samples of black tea lately tested upon their arrival from China, twenty-three consisting of congous and souchongs, were genuine, while twelve, which consisted of scented caper, chulan, or black gunpowder, were adulterated. This adulteratiod consisted in the leaves having been faced, so as to improve the appearance of the teas, with black lead, and irridescent powder resembling mica, indigo, and turmeric. As for green tea, there is no such thing by nature, but plenty by art. Of thirty samples tried, all were found to have been adulterated. Five consisting of what is called "lie" tea, which is simply tea-dust and sand made up with rice water; one was composed of paddy husk and other substances; and one was a mixture of "lie" tea and spurious leaves of other plants Every one of the thirty sorts was artificially glazed or coloured, Prussian blue, indigo, turmeaic powder, and China clay being the substances employed. In no instance amongst all these trials was a single leaf discovered possessed of a green colour better than was produced by artificial means. No wonder people can't go to sleep after drinking green tea; as for "the nerves," it's strange how they stand it all.

VITALITY OF SEED.

"Ion," a Washington correspondent of the Baltimore *Sun*, in a letter to that paper says:

"I received lasr winter two seeds, said to be wheat, which were found in the folds of the Egyptian mummy which Mr. Giddon unrolled in Boston. The mummy was supposed to be one of the Pharaohs. It proved to be a priestess, and to be more than thirty centuries old.

"The seeds were shaped something like pearl barley, and of that size, and were of a dark tinge, as if colored by the same preparation which had been used in the process of embalming.

"I planted the two seeds in a flower pot in the spring. They germinated, grew finely, and one of the plants bears a hundred or more grains. The other is more backward, and is still in flower. The leaf resembles maize. It may be a species of millet. The land of Egypt—the granary of ancient times—must, of course, have been cultivated with grain, which, for that climate and soil, was very productive and nutritious. It was hardly worth the while of the priestess to have taken with her these two small emblems of the resurrection, unless they were valued grains.

"A bulb was once taken from the hand of a mummy and planted, and grew up a beautiful dahlia. In another instance a few grains of wheat were found, which is now cultivated in England, and called mummy wheat. I shall call mine *mummy millet* until I find some appropriate name."—*State Republican.*

INDUSTRIAL EXPOSITION, 1851.

The Premiums awarded at this Exhibition are all Bronze Medals, of admirable design and workmanship, calculated to perpetuate the memory of the Exhibition and the merit of the successful exhibitors through ages. They are of two kinds—the Jury Medal, awarded by the several Juries, to the articles of decided merit exhibited in their respective classes; and the Council Medals, awarded by the Council of Presidents of the several Juries, on the recommendation of those Juries respectively to their several sections, by these to the Council of Presidents, and there approved and ratified. It was intended that this Medal should be given only for original Inventions or Discoveries of decided utility and merit; but the grounds on which it is conferred have been practically and considerably widened in the course of the investigations and awards. *One hundred and sixty-nine* only of these 'Council Medals' have been awarded in'all—distributed among the several Nations represented in the Exhibition, as follows:

To Great Britain,	79
To Germany,	12
To Austria,	4
To Belgium,	2
To Tuscany,	2
To Spain,	1
To France,	56
To United States,	5
To Russia,	3
To Switzerland,	2
To Holland,	1
To Rome,	1
To Turkey,	1

—*N. Y. Tribune, Oct. 15th.*

THE APPLE CONTEST.—A few days ago, an apple was sent to the Brantford *Herald* office, which weighed 10 oz. and was 14 inches in circumference. Instanter, the Hamilton *Spectator* announced the receipt of a couple weighing 22 oz. each. The good folks of Dumfries, jealous of their reputation for prize wheat, fancied themselves challenged to the contest, and in dropped three apples into the office of the Dumfries *Reformer*, weighing nearly 24 oz. each. Hamilton again took alarm, and four apples made their appearance on the table of the *Gazettee*, weighing respectively, 26 oz., 25½ oz, 23½ oz., and 24 oz. each.—*Globe.*

HYDROPHOBIA.

A case of death from the bite of a mad dog at Banbridge, in Ireland, an account of which appears in a Dublin journal, induces us to publish the following from the last New York *Sun*. Of course we cannot tell whether the proposed cure would be efficacious or not, but the *possibility* of its being so, in such a dreadful emergency, is a sufficient reason for making it known.—

CURE FOR HYDROPHOBIA.—Mr. James A. Hubbard, of Boone county, Illinois, in a letter to the St. Louis *Republican*, says:

"Eighteen years ago, my brother and myself were bitten by a mad dog. A sheep was also bitten at the same time. Among the many cures offered for the little boys, (we were then ten or twelve years old,) a friend suggested the following, which he said would cure the bite of a rattlesnake:

"Take the root of common upland ash, commonly called black ash; peal off the bark, and boil it to a strong decoction, of this drink freely. Whilst my father was preparing the above, the sheep spoken of began to be afflicted with hydrophobia. When it had become so fatigued from its distracted state as to be no longer able to stand, my father drenched it with a pint of the ash root ooze, hoping to ascertain whether he could depend upon it as a cure for his sons. Four hours after the drench had been given, to the astonishment of all, the animal got up and went quietly with the flock to graze. My brother and myself continued to take the medicine for eight or ten days—one gill three times a day. No effects of the dreadful poison were ever discovered on either of us. It has been used very successfully in snake bites to my knowledge."

A VALUABLE EXPORT.—The total quantity of dried codfih exported from the port of St. John's, N. B., from the 1st Jan. 1851 to the 16th Sept. of the same year, amounted to 309 994 quintals—the value of which was probably over £200,000. This is of course entirely independent of the immense number of salmon, oil, seal skins, &c., which form such large items in the export trade of St. John's.—*Nova Scotian, Oct. 1.*

PEACHES.—The New York Post of last evening says: "Peaches are becoming abundant in the city received from Delaware. During the past two days about 2000 baskets have arrived over the Camden and Amboy Railroad. The price ranges from $1,25 to $2,00 the basket.

TO TAKE INK OUT OF LINEN.—Printers' and clerks' wives will learn with pleasure, that to take a piece of tallow, melt it, and dip the spotted part of linen into the melted tallow, the linen may be washed, and the spots will disappear, without injuring the linen.

It is estimated that the city of New York pays $10,000 a day for cigars, and $8,500 a day for bread. It is also computed that 20,000 persons, every year, in America, go to the grave from the use of tobacco.

Directions for the Cultivation of Flax.

The following plain and simple directions with respect to the preparation of the land and cultivation of flax, are extracted from the valuable directions on the subject, compiled by the committee of the Royal Irish Flax Society from a mass of information obtained by the society, and their agriculturists during the last ten years. Some very useful instructions on the same subject are contained in a small and very valuable pamphlet called "The Flax Grower," by G. Nicholls, Esq., late secretary to the Poor Law Board, published by Knight of Fleet street; in the various publications of Mr. Warnes, by Ridgway; and in "Flax: its Cultivation and Management," by E. F. Deman, late technical instructor to the Royal Flax Society; also published by Ridgway.

Soil and Rotation.—By attention and careful cultivation, good flax may be grown on various soils; but some are much better adapted for it than others. The best is sound, dry, deep loam, with a clay subsoil. It is very desirable that the land should be properly drained and subsoiled; as, when it is saturated with either underground or surface water, good flax cannot be expected. In Belgium, it invariably follows a corn crop—generally oats; and in this country (Ireland) where oats is such a usual crop, the same system might be profitably pursued; but it must be understood, that it is only from oats following a green crop or old lea, and never after two or three succeeding crops of oats, which bad practice still prevails in some districts. Except on very poor soil, a better crop will be produced after grain, and the double benefit of the grain and flax secured. If old lea be broken up, and potatoes planted, followed by a grain crop, a very fine crop of flax may be obtained in the ensuing year.

Preparation of the Soil.—One of the points of the greatest importance, in the culture of flax, is by thorough-draining, and by careful and repeated cleansing of the land from weeds, to place it in the finest, deepest, and cleanest state. This will make room for the roots to penetrate, which they will often do to a depth equal to one-half the length of the stem above ground. After wheat, one ploughing may be sufficient on light, friable loam, but two are better; and on stiff soils, three are advisable—one immediately after harvest, across the ridges, and two in Spring, so as to be ready for sowing in the first or second week of April. The Spring ploughing should be given some time before sowing, to allow any seeds of weeds in the land to vegetate, and the harrowing in of the flaxseed will kill them, and save a great deal of after weeding. Following the last harrowing, it is necessary to roll, to give an even surface and consolidate the land, breaking this up again with a short-toothed or seed harrow, before sowing, which should be up and down, not across the ridges or anglewise.

Sowing.—The seed best adapted for the generality of soils is Riga, although Dutch has been used in many districts of county, for a series of years, with perfect success. In buying seed, select it plump, shining, and heavy, and of the best brands, from a respectable merchant. Sift it clear of all the seeds of weeds, which will save a great deal of after trouble, when the crop is growing. This may be done by fanners, and through a wire sieve, twelve bars to the inch. Home-saved seed has produced such excellent crops, of late, that is strongly recommended that every farmer should only sow, each year, as much foreign seed as would produce a sufficient quantity for his flax crop of the following season. The thinner portion of the crop would be the best for this purpose, as, when flax grows thin, it produces much seed. This plan, besides the saving effected in the price of foreign sowing seed, would effectually secure the farmer from any danger of loss from fraudulently-made-up seed. The proportion of seed may be stated at three and a-half imperial bushels to Irish or Plantation acre; and so on in proportion to the Scotch or Cunningham, and the English or Statute acre. It is better to sow too thick than too thin; as, with thick sowing, the stem grows tall and straight, with only one or two seed capsules at the top; and the fibre is found greatly superior, in fineness and length, to that produced from thin-sown flax, which grows coarse and branches out, producing much seed, but a very inferior quality of fibre After sowing, cover with a seed harrow going twice over it—once up and down, and once across or anglewise: as this makes it more equally spread and avoids the small drills made by the teeth of the harrow. Finish with the roller, which will leave the seed covered about an inch—the proper depth. A stolen crop of rape or Winter vetches, or of turnips of the stone or Norfolk globe varieties, may be taken, after the flax is pulled. Rolling the ground after sowing is very advisable, care being taken not to roll when the ground is so wet that the earth adheres to the roller.

Weeding.—If care has been paid to cleaning the seed and soil, few weeds will appear; but if there be any they must be carefully pulled. It is done in Belgium by women and children, who, with coarse cloths round their knees, creep along on all-fours. This injures the young plant less than walking over it (which, if done, should be by persons whose shoes are not filled with nails.) They should work, also, facing the wind, so that the plants laid flat by the pressure may be blown up again, or thus be assisted to regain their upright position. The tender plant, pressed one way, soon recovers; but, if twisted or flattened by careless weeders, it seldom rises again.

Pulling.—The time when flax should be pulled (if intended to be treated for flax cotton is, when perfectly ripe: if it is desired to obtain a fine fibre suitable for the present flax manufacturers,) the best time for pulling is, when the seeds are beginning to change from a green to a pale brown color, and the stalk to become yellow, for about two-third of its height from the ground. When any of the crop is lying, and suffering from wet, it should be pulled as soon as possible, and kept by itself. If the ground has been thoroughly drained, and laid out evenly, the flax will be all of the same length. It is most essential to take time and care to keep the flax even, like a brush, at the root ends. This increases the value to the spinner, and, of course, to the grower, who will be amply repaid, by an additional price, for his extra trouble.

The following directions with respect to the removal of the seed from the flax, are given in the *Flax Grower*, by G. Nicholls, Esq.:—

"The separation of the seed is usually effected by beetles or blocks of wood about nine inches long and four inches square, into which a handle of convenient length, and somewhat bent, is fixed, and with which the seed is readily beaten out. It may also be removed by simply drawing the flax stalks through a row of iron spikes set upright in a wooden frame, and so close to each other as to catch and separate the bolls containing the seeds, as the stalks are drawn through."

The flax may be stacked when pulled perfectly

ripe and dried, either before or after the removal of the seed, as may best suit the convenience of the grower.

SIR JAMES GRAHAM ON AGRICULTURE.

The annual exhibition of stock and implements, in connection with the East Cumberland Agricultural Society, was held at Carlisle on Thursday, and, after the inspection, a party of 150 gentlemen sat down to dinner, under the presidency of Sir James Graham. In proposing the principal toast of the evening, the right hon. baronet made an intersting speech on the agricultural prospects of the country; and particularly of Cumberland. Referring in the first place to the American reaping machine, a specimen of which had been exhibited in the morning, he characterised it as "an instrument of great promise," adding: "It is true, it was made on the other side of the Atlantic, and for that very reason I think it is entitled to especial attention in England. It is the work of those who I regarded as distant brothers employed in the same occupation, and contending who shall bear off the palm of success.—This is the rivalry which I should wish to see between the two nations. We are brethren by nature and brethren in our love of independenee and free institutions.—Their institutions stand upon the same bases as our own, and any suggestions coming from that quarter are entitled to our respect and consideration." He proceeded to recommend that more attention should be paid to grazing, and less to ploughing, supporting his advice by the following general cogsiderations. "Let me remind you that in Great Britain we are in a very artificial state. These little islands are densely inhabited, and no less than £100,000,000 is embarked in the four textile fabrics, cotton, silk, wool, and flax. Two of these raw materials are beyond our reach. Cotton and silk we cannot produce; but we can produce wool, and we can produce flax; and I say it is worthy of the consideration of the agriculturists of this country to adapt their land to the growing wants of the community in which we live, and to place our country, as far as in us lies, in the situation of not being exclusively dependent for the supply of such raw materials as wool and flax; not exclusively, I say. Observe well, no article has gone on so steadily advancing in price as wool; no article has paid the farmer so well in the shape of produce as wool; and the sheep which produce the wool are, in my opinion, under proper management, the keystone of the improved cultivation of the soil."—With regard to the other raw material, flax, he had a strong opinion that, with the great increase in the demand for British linen, they might increase the cultivation of flax on second-rate soils with the utmost advantage. Many years ago the growth of flax, in small quantities, on each farm was almost universal, and, to a limited extent succeded. "Circumstances," said the speaker, "are now not altered. It was not then profitable on the large scale, but now the demand for flax for manufacturing linen alone is almost boundless. Its exportation is immense, and a great question is pending but it is unsettled, whether flax may not be favourably mixed with wool and cotton in textile fabrics. If that should turn out successful, then the growth of flax will be prudent on the part of agriculturists." After adverting to the practical difficulties in the way of the preparation of the flax, and expressing a hope that they would be surmounted by the invention of M. Claussen, Sir James said, "Such is the enterprise the skill, and I would almost say the patriotism, of the manufacturing interest of this country—not without preference to gain which is the real incentive of all improvement—that if you can show that any such process will pay the manufacturer, that manufacturer of the raw material will establish a mill in the neighborhood; and I hold it to be one of the duties of landlords to ascertain whether this mode of dealing with flax be not feasible, and, if it be feasible, to make an effort to introduce in their neighborhood the machinery and manufacture requisite for the extended growth of so important and useful a crop as flax."

Durability of Wood.—The piles under the London bridge have been driven five hundred years, and on examining them in 1846, they were found to be a little decayed. Old Savoy-place, in the City of London, was built 650 years ago, and the wooden piles, consisting of oak, elm, beach, and chesnut, were found upon recent examination, to be perfectly sound. Of the durability of timber in a wet state, the piles of a bridge built by the Emperor Trajan over the Danube affords a striking example. One of these piles was taken up, and found to be petrified to the depth of three-fouths of an inch; but the rest of the wood was not different from its former state, though it had been driven 1600 years.

Machine for Making Blinds.—Mr. Daniel H. Thompson, Springfield, Mass, has taken measures to secure a good improvement in machinery for manufacturing blinds for windows, &c., whereby the different operations required upon the several parts composing the blind are conducted at the same time. This is done by platforms, the motion being communicated to them by cranks which operate the boaring bits, the cutters for forming the tennons, the points for pricking wire holes, all of which are done so systematically, that we may expect a considerable reduction in the price of blinds by this invention. It is a useful improvement.—[Scientific American.

A Singular Object.—One of the most singular mechanical inventions displayed at the world's Fair, is the model of a man, by Count Danin. It represents the figure of a man five feet high, in the proportion of the Apollo, and from that size the figure can be increased in all its compartments to six feet eight inches. It is intended to facilitate the clothing of an army; and it is so ingenious that the emperor pardoned and recalled Count Danin, who is a Pole, on seeing this result of many years' labour. The number of pieces composing this model is 7000.

Nature and Art. — An American countryman, fresh from the magnificent woods and rough clearings, was one day visiting the owner of a beautiful seat in Brooklyn, and, walking through a little grove out of which all the underbrush had been cleared, paths had been nicely cut and gravelled, and the rocks covered with woodbine, suddenly stopped, and, admiring the beauty of the scene, lifted up his hands and exclaimed, "This I like! this is Nature — with her hair combed."

It may be useful Presently.—To render boots and shoes waterproof.—Mix carefully over a slow fire a pint of drying oil, two ounces of yellow wax, and a half an ounce of Burgundy pitch. Lay the mixture whilst hot, on the boots or shoes with a sponge or bit of flannel, and when dry lay it on again; repeat the operation until the leather becomes saturated. Let them be put away and not worn till they become perfectly elastic, when they will be found not only impervious to water, but soft, pliable and more durable.

KNOWLSON'S COMPLETE FARRIER.

SURFEITS.

Continued.

Cure. If we duly consider the nature of Surfeits, their cure will be much more easily performed. All allow that they rise from a bad state of the blood; but how is this to be remedied? By bleeding and purging. But this must be done in a very gentle manner. Take about a quart of blood, and the next day give the following ball.

1 oz. Socotrine Aloes.
1 drachm of Calomel pp.
2 do Oil of Aniseeds.

Add as much lenitive electuary as will make it into a ball. Give plenty of warm water to work it off. Repeat both bleeding and physic in eight days; and when the last dose is wrought off. Give him six ounces of the cordial balls in a little warm ale. Also give a spoonful of the following powders every day in a mash.

4 oz. Flour of Brimstone.
4 do Crocus Metalorum.
4 do Nitre, in powder.

Mix all up well together. By persevering in the above method you may cure the most inveterate surfeit, and if any scabs or runnings appear in the skin, rub them with the following.

4 oz. Sulphur of Vivum.
2 do White Copperas.
2 do White Hellebore, in powder.

Mix these powders with churn-milk, rub the places affected well and the grievance will soon disappear. Sometimes a Surfeit settles in the legs, and they swell much and then break out and run very much. When this is the case, two taps put into the lower belly will be found of great use. Staling balls shold be given every third day, and plenty of warm water to work them off with. Make the staling balls as follows.

1 oz. of White Rosin.
4 drachms of Castile Soap.
2 do Oil of Juniper.
2 do Camphor.
4 do Saltpetre.

Bray all well together into a paste, in a mortar, and form it into a ball. The above is only for one dose, but you may make as many as you think proper at once, and keep them for use. Give them at night and they will work off the next day. These balls are of great service in many of the disorders of horses, and some of the best staling balls yet found out.

By following the above directions, a cure will generally be performed. Sometimes in this disorder little knots break out, especially upon the hind parts of the horse, and these knots throw out a little matter. When this is the case, you must rub them with strong mercurial ointment. Sometimes these little tubes, or pustules have living insects in them; but by rubbing them as I have just directed you, they will be destroyed, and the cure completed.

THE HIDEBOUND.

This disorder is too often brought on by the horse being worked too hard, and badly kept; although this is not always the case. When the skin of a horse sticks so close to his ribs that it appears immoveable, the horse is said to be hidebound. But this is not properly a disease, but rather a symptom, being often caused by previous disorders, such as fevers, convulsions, surfeits, worms, or disorders of the kidneys or lungs.

Cure. As the hidebound may proceed from various causes, it is necessary to determine the cause, before such medicines can be applied as will remove it.

If we owe its origin to hard labour and want of food, rest and plenty will soon remove it. If it be caused by worms, worm medicine must be applied; or if it be left by any imperfectly-cured disorder, the following drink must be given.

2 oz. of Anniseeds, in powder.
2 do Ginger in powder.
1 do Grains of Paradise
2 do Mustard.
2 do Turmeric.

All to be powdered, and to be given in warm ale, fasting, and to fast two hours after. Give warm water two or three times. Bleeding, tapping, and physic are also necessary, when the hidebound is left by any disorder.

THE MANGE.

This disorder is more shameful than dangerous, for you cannot go abroad with a scabbed horse without being hissed at, neither is it proper, for this disease is so infectious that every horse that may come near it will be in danger.

The mange is too well known to need a long description, though some have been mistaken and have taken a hot itching eruption for it.

Symptoms. At first it is confined to the skin, but by long continuance it vitiates and pollutes the blood. The skin is generally thick and full of wrinkles, especially about the mane, the loins, and the tail; and the little hair remaining on those parts stands erect. The ears and eyebrows are commonly naked; and when the limbs are effected, they have the same appearance; but at the same time the horse is not raw, nor does the skin peel off as in a surfeit.

Cure. When the horse has been infected by another, the disorder is not so obstinate as when caused by starvation, for the blood will not be in so bad a state. When you think a horse has got the Mange, apply the following where you think it needful.

4 oz. Sulphur Vivum.
4 do White Copperas.
4 do White Hellebore Root, in powder.

Mix all together in two quarts of churn milk, and rub the places well. By this method you may cure most scabs of short duration, but when once the mange has got great hold, it will require sharper treatment. Make the following for one horse.

4 oz. of Sulphur Vivum.

2 do White Hellebore Root, in powder.
2 do Blue Stone Vitrol, in powder.
½ do Verdigrise, in powder.
4 do Flanders Oil of Bays.
3 gills of Whale Oil.

Mix all well together, and rub the horse well with it all over in the sun, if in summer, but before a fire if in winter. In summer you must also turn him out to grass after rubbing, but in winter keep him warm in the house. You must be careful to wash to wash your saddles and bridles, cart-gears, stands, mangers, racks, &c., with quick-lime and chamber-lie; for if you do not clean all that the horse may have used, the infection will remain. You will find the above a certain cure, if managed rightly, for I have cured hundreds with it, and I do not remember one instance of its failure.

At the same time give freely of flour of sulphur and liver of antimony; and if you have a number of horses infected, be sure to rub them all together.

Some people say that when a horse is rubbed for the scab he will infect others, but I am of opiuion that he will not, neither do I remember an instance of it.

SPRAINS.

All kinds of sprains resemble each other. They are a relaxation of the tendenous fibres, from the muscular parts being overstretched.

A SPRAIN IN THE BACK.

Sprains in the back are mostly caused by overweighting the horse, or by his loosing his hind feet on the side of a hill; and sometimes by putting him back too quickly. There is much difference between a sprain in the back and what is tifled in the back. Sometimes a horse catches cold in his loins by having his clothes or his saddle taken off when he is hot, and being turned out of doors; and some horses are subject to Rheumatics, which make them lame in many places, and are generally taken for Srains.

To cure a pain in the back, first bleed pretty freely and then give the following drink.

1 oz. Tincture of Guaiacum
1 do Balsam Capivi.
1 do Oil of Juniper.

To be put into a quart of strong parsley-root tea; half to be given at night, half in the morning, and plenty of warm water to work them off.

Also lay a sheep's skin with the flesh side to his loins for six or eight hours, if he can bear it; and then turn the wool side to him, and let it stay on a day; when you take it off, sheet him well for fear of catching cold. Also make a plaster of the following.

2 oz. Oxycrosem.
2 do Paracellis.
2 do Red Dominion.
2 do Burgundy Pitch.

Melt all together and lay them on pretty warm and put a little wool clipped short on the charge while hot, and then pour on a little cold water to fasten the whole together. These are the best methods I am acquainted with.

A SPRAIN IN THE SHOULDER.

When the shoulder of a horse is sprained, he does not put out that leg like the other, but in in order to ease it sets the sound foot firmly on the ground. When trotted in hand he forms a kind of circle, with his lame leg instead of putting it forward, and when he stands in the stable that leg is advanced before the other.

There is what is called a Shoulder-slip, which is worse than a Sprain. When this happens the horse can neither lift his leg nor put it forwards. You may know this by the shoulder-blade standing higher than the other; but to discern that you must make his stand on the lame leg, for the leg he stands on will always appear a little higher than the other. The flesh will also shortly waste away from the shoulder blade, which is a sure sign of a Shoulder-slip. When the accident has taken place, put a tap into the lame side of the animal's breast, and blow the shoulder full of wind with a pipe. When you have rinded the skin to put the tap in, hold the skin fast to the pipe, and blow the part you have rinded full, and let some one draw the wind up into the shoulder with the edge of his hand as far as the top of the shoulder-blade, and then put in the tap or rowel, and stop the hole up well with tow and salve. Give warm water for three days, and then open the place, stir the tap round, and rub the shoulder all over with the following liniment.

2 oz. Spirits of Wine.
2 do Sweet Oil.
2 do Spirits of Sal Ammoniac.

Shake them well together, rub the shoulder well with the mixture every third day for some time, and if the horse do not get better with three or four times rubbing, use the following.

2 oz. Oil of Turpentine.
1 do Oil of Origanum.
1 do Oil of Bricks.

Shake these up together, rub all on a time, and walk the horse about a little afterwards. When near the sea, swimming in the salt water is very proper, and I have known swimming in fresh water to be of great use.

A Sprain in the shoulder point requires nearly the same treatment as a slip but you need not blow it. When it is attended by inflammation, cooling mixtures, such as an extract of lead and water must be used. But when a swelling or an inflammation takes place, it is mostly caused by a hurt, or by a stroke from another horse. If there be no swelling, rub the shoulder point well with the following mixture every day.

1 oz. Oil of Peter.
1 do Oil of Amber.
1 do Oil of Spike.
1 do Oil of Bricks.

Shake these well together, and rub the shoulder point every other day. If the horse be not better, take

1 oz. Oil of Turpentine.
1 do Oil of Origanum.
1 do Oil of Swallows.
1 do Oil of Amber.

Shake these together, and rub the shoulder point well with them every third day; and if the horse continue lame, recourse must be had to blistering.

CANADIAN STOCK AT THE LATE NEW YORK STATE FAIR.

We observe the American Agriculturial Press is quite eulogistic on Conadian Live Stock, exhibited at the Rochester Fair. The *Cultivator* remarks in reference to Short Horns:—There were several fine specimens from Canada, owned by Messrs. Fergusson, Wade, and others. Mr. Fergusson's roan bull *Halton*, and his red cow, and Mr. Wade's roan bull, *American Belted Will*, were among the very best animals in this class; and it was the opinion of many connisseurs that Mr. Fergusson's cow was the finest Short-horn on the ground. * * * * Mr. Gapper, of Canada, also exhibited several good Devons. One of his cows, own sister to the noted bull, Major, (who was bred by Mr. Gapper,) was one of the best of her class, and his young imported bull has some very superior points,—especially the general fullness and levelness of his back."

SHEEP:—"The Long Wools were quite numerous, but for the chief excellence of their specimens exhibited, we are sorry to say we are indebted to our Canadian brethren. The lots offered by Mr. Gapper, of Thornhill; Mr. Wade of Port Hope, and Mr. Miller of Pickering, were good specimens of Leicesters; and Mr. Miller's ewes, might almost be taken as standards for that breed." Canadian horses are mentioned in very high terms in several American papers.

In addition to the high authority of the *Cultivator*, we subjoin some remarks on the Honourable Adam Fergusson's bull, Halton, from a correspondent of our excellent contemporary, the *Rural New Yorker*, with the editor's note.

"The other, was a splendid bull, owned by our Canadian friend, Adam Ferguson, Esq. He was four years old, of beautiful roan color—large, and perfect in form and proportions. So fine a head, with so bright and mild expression of the eye, I never saw before on a bull. His horns, though but few inches in length, were beautiful in form and position—a feature not often met with among the improved Short-horns. The painter, or engraver, who should attempt to flatter this animal in executing his likeness, would only mar his beauty. It would be extremely difficult for either artist to do him simple justice. I speak in strong terms—and he merits all I have said. This fine animal, I learn, was purchased by S. P. Chapman, Esq., of Madison county, before leaving the Fair. The farmers of that county may justly congratulate themselves upon the acquisition of so valuable an animal."

"REMARKS.—In giving place to the above, it may be proper to remark that its author is not at present interested, either directly or indirectly, in the kinds of stock mentioned. He was formerly an extensive farmer, and the owner of as many fine horses, cattle and sheep as one man ought to possess—and from his long experience and good judgment, is eminently qualified to write upon stock and stock breeding. For this reason—and the additional one that he has no interest to subserve, except that of the public—his remarks are reliable, and cannot be ascribed to personal motives.—EDS. RURAL.

It unfortunately happened for our Canadian Exhibition, at Brockville, that Mr. Fergusson and Mr. Gapper sold all the animals they took to the Rochester Fair. We could wish that our farmers generally felt a deeper interest in the improvement of stock, which can be done only by using first rate male animals of unquestionably *pure breed*. Canada is attaining to a very respectable position in this respect, mainly through the persevering energy of a comparatively few scattered individuals; among whom Mr. Fegrusson has always occupied a prominent place. We were told the other day by a friend having much experience and critical taste in these matters, that Mr. Fergusson's present herd, possessing in its purity the celebrated Bates' blood, is of a very high order of excellence. We trust we shall see the agricultural art, in all its branches, keeping pace with the fresh impetus which railways and improved machinery are about to confer on the commerce and manufacturing industry of this young and highly favoured country.

Improved Breed of Cattle.

To the Editor of the Canadian Agriculturist.

DEAR SIR,—It was fully my intention to send a Letter on the above subject, for your *November* Number, but as a statistical account in reference thereto which I have been looking for the last week, has not reached me, I am under the necessity of postponing my communication till the issue of your December Number—the Letter would have had reference to the contents of Friend Tye's and Southam's Letters on the same subject. I shall hope, however, soon to be

in receipt of the information required, and I trust I shall then be able to command sufficient time after I receive it, to send you my Letter for your December Number.

Believe me to be,
Yours Respectfully,
H. Parsons.

Guelph, 30 October, 1851.

N.B.—There are other subjects of general interest in your last two or three numbers that I hope to say a word upon, so soon as I can command a few hours leisure. H. P.

ANCIENT CLOTH TAKEN FROM THE MOUNDS OF OHIO.

In 1838, Mr. Foster, U. S. Geologist, procurod from a resident of Charleston, Jackson county, Ohio, several fragments of cloth taken from a mound in that vicinity. They were found near the bottom, enveloping several copper rings, and were greatly decayed; though some were sufficiently preserved to evidence their having been woven. Fearing deception or error, Mr. Foster refrained from making public, at that time, a fact so novel in itself, and so repugnant to prevailing ideas as to the degree of civilization possessed by the mound-builders; but having lately received from Mr. John Woods, of Ohio, a gentleman high in office, and of unquestionable veracity, additional samples, accompanied by a descriptive letter, all doubt as to the propriety of publishing the discovery is removed. In his letter, Mr. Woods states that the fragments of charred cloth, together with an arrow, and a considerable quantity of charcoal and bones, were taken from a mound on the western bank of the Great Miami River, two miles north of Middleton, Butler county, Ohio, during some excavations rendered necessary in constructing the Cincinnati, Hamilton, and Dayton Railroad. The mound was originally twenty feet high, and, fifty years ago, was covered with large forest trees. About ten feet from its surface there was a compact layer of fine, red, and apparently burned clay, about an inch thick; underneath which, near the middle of the mound, was another layer of fine, cream-coloured clay, differing from any in the neighbourhood. Under this latter, the charcoal, cloth and bones were found. The bones were few and small. Little earth was mixed with the coal and cloth, which evidently remained as they had been placed when burned and covered up. The charcoal appeared to be on the outside of the cloth, which was frequently in folds of half a dozen thicknesses. The layers of burned and cream-coloured clay did not occupy but abont five or six square feet of the mound. As to the period when the charcoal and cloth were deposited in the mound, the only question occurring to Mr. Woods was, whether the mound erected by a former race may not have been made a burial place by the Indians living bere when America was discovered. Thinking of this question while at the mound, he was careful to examine the condition of the earth around and above the relics, and came to the conclusion that it could not have been disturbed after it was placed in the mound. On this question Mr. Foster further remarks, that there is no evidence that the North American Indians possessed the art of spinning and weaving when first known to the whites; consequently, they never possessed it; for an art so useful, when once acquired, would not be lost. That the cloth was obtained from Europeans by the Indians and then placed in the mound, at a comparatively recent period, is improbable for the following reasons: The layers of earth surrounding it were undisturbed;—its material, being less adapted for clothing and more costly than wool, is not such as a civilized race would manufacture for a barberous one; and, moreover, the texture of some of the samples could not have been formed in an ordinary loom, but, was undoubtedly woven by hand. From these facts, Mr. Foster infers that the mound-builders who have left memorials of their existence from the shores of Lake Superior to those of the Mexican Gulf, were a laborious, intelligent people, far more civilized and advanced in the arts than the present race of Indians, with whom they appear to have no connection. The fabric in these samples of cloth, seem to be of some material allied to hemp; and the separation of the fibre from the wood is as complete as if done by the modern processes of rotting and heckling. The thread, though course, is regularly spun. The texture of the samples from Jackson county, is formed by the alternate intersection of the warp and woof; but in others from Butler county, the weft is wound once round the warp—a process only to be accomplished by hand. There is no reason to doubt that these woven fabrics are the work of the mound-builders. The art of spinning and weaving was practiced by the ancient Peruvians. At Pachacamac, thirty or forty miles from Lima, where stands the temple of the sun, there are numerous remains of walls built by sun-dried bricks indicating the site of a once large and compact town. In the burial-place here, are found numerous mummies in a sitting posture, wrapped in many folds of a woven cloth, with an exterior covering of coarse matting. The fabric consists of the wool of lama or alpaca, and a cotton, which here grows spontaneously.

Kossuth's Personal Appearance.

He stands about 5 feet 8 inches in height, has a slight and apparently not strongly knit frame, and is a little round shouldered. His face is rather oval; a pair of gray eyes, which somewhat reminded me of O'Connell's in expression, well set beneath a full and arched brow, give an animated and intelligent look to his countenance. His forehead, high and broad, is deeply wrinkled, and time has just begun to grizzle a head of straight dark hair, and to leave a bald spot behind. He has got the true Hungarian nose, but it is a fair, well formed feature,—such as a French passport would describe as *moyen;* a thick moustache nearly covers his mouth, except when he speaks or smiles, and unites with beard and whisker in a full flock of dark hair, falling down from the chin. The portraits are singularly unlike him in either person or expression. Whether from his recent captivity or constitutional causes, there is somehow an air of lassitude in his look, to which the fatigues of his voyage not improbably contributed. Altogether he gives one the idea of a man of thought rather than a man of action; there is a speculative air in his face, mingled with melancholy, which would mark him for a visionary or theoretical enthusiast rather than a great leader or a soldier. He was very plainly attired in a dark green frock-coat, with a little silk braid at the back and edges, and wore a common low-crowned square felt hat. Madame Kossuth, who seems in delicate health, stood beside her children, Francis and Louis, boys, and Wilhelmine, a girl, the eldest about 11, the youngest 7, and was dressed as simply as her husband. Some fine looking fellows, bearded like the pard, in braided military frocks lounged about the decks, a few of whom as indeed possibly their leader might have done, had suffered, no doubt, a good deal from sea sickness.

FATTENING ANIMALS.

The following hints should be observed in the treatment of fattening animals:

1. They should be kept comfortable and quiet, and suffered to take no more exercise than is necessary for their health. All exercise, more than this, calls for a expenditure of food, which does not avail anything in the process of fattening. Everything which serves to make an animal uneasy and discontented, should be avoided, for under such circumstances they thrive but very poorly.

2. Where several articles of food are to be used, the least palatable and nutritious should be fed first, and the most nutritious reserved to complete the process.

3. They should be fed regularly, and their food should be given in the proper quantity, so that none is wasted, and that the animal shall be in no danger of suffering from surfeit on the one hand, or hunger on the other. Their food should be given by a careful and observing hand, and they should be closely watched, so that all their wants may be seasonably met.

4. Their food should be suitable, and it should be suitably prepared. Nearly all domestic animals thrive better on a variety of food, and they become cloyed with a single article, when fed exclusively on it for a great length of time. Most farmers may very easily secure for all their fattening animals the requisite variety of food.—Potatoes and apples, or potatoes and pumpkins, boiled and mashed together, with the addition of a little meal may be used with advantages for fattening swine.

5. Care should be taken that animals do not become dyspeptic and unhealthy, as they sometimes do, owing to errors in feeding. The health of swine is promoted by supplying them with charcoal, while fattening. They are also more fond of food which has been slightly fermented, as they appear to fatten faster upon it, if it is fed to them in this state.

6. For fattening neat cattle, the advantage of cooking the food is not so great or so evident as it is in the case of swine. For the former, corn and cob meal ground together, is better than the corn alone—as the nutriment is diffused through a greater bulk, lays lighter in the stomach, and is more thoroughly digested. For swine, the benefit of the cob is not so apparent; although some prefer corn and cob meal for swine. In whatever form we give Indian corn to swine, there is considerable advantage, we think, in having it boiled or steamed. Swine are said to be much more quiet, and consequently gain flesh much faster when fed on mush, or hasty pudding well cooked, than when the same ingredients are fed to them uncooked.—*Maine Farmer.*

A Great Calf.—The Keene News states that Mr. Elias Lyman of White River, Hartford, Vt. has a calf which, on the 23th of May, weighing 596 2½ pounds. He was then a little short of four years old. The News adds:

This animal, the greatest of its kind, has been a "sucker" all his life time, having taken the milk from one to six cows. At the time our informant saw it weighed, May 28th, it took the milk of six cows daily.—The cows, in turn, were driven upon a stand at a convenient height, and his calfship helped himself as other calves are wont to do. The price asked for him was $1000—which had been offered for him on condition that Mr. L. would deliver him safe at Brighton Market, which condition Mr. L. did not see fit to comply with.

The Civilized Indians.—The hunting ground no longer affording a supply of the former accustomed game, the Indian has diverted his attention to agriculture, and from a correspondent we learn the names of several of the Mohawk agriculturist, and the result of their years' labour.

Peter Smith,	Onondaga,	1600	bush.	wheat
Aaron do	Tuscorora	1300	"	"
Jas. Powless,	"	1100	"	"
John Garlo,	Onondaga,	1700	"	"
Jonn Johnson,	"	800	"	"
Peter Garlo,	"	500	"	"
Thos. Puruing,	"	400	"	"

This is a gratifying contrast to a period not many years past, when all these Sons of the Forest were living in a wild erratic life, depending more for a livelihood upon their instinct than their intellect.

We shall be happy to receive and publish any further information, respecting the progress and prosperity of our red brethren.—[Hamilton Gaz.

Filling Beds.—Beds should be filled with barley straw in preference to rye, oat, or wheat straw, if obtainable. The husks of Indian corn, carefully selected and slit into shreds, make an excellent article for beds. They are durable, clean, not very liable to absorb moisture, and are not objectionable on account of making dirt.

To Prevent Dampness in Walls.—Use a paint made of one part beeswax, three parts boiled linseed oil, one-tenth part of lithrage, put on hot. The wall should be entirely dry, and if possible, heated. Three or four coats will render a stone or brick wall impervious to moisture.

Curious Pear Tree.—A very curious pear tree is to be seen in a garden within a block or two of the Greenwood Cemetery, near New York. Every alternate year one of the two sides—blossoms and bears fruit. This year, for instance, one side will bear an abundant crop of sweet fruit; the other nothing. The side that does not bear this year, will blossom and yield a good crop of sour fruit next year, and so alternately. This has been the case ever since the tree first yielded fruit. Altogether it is a great curiosity.

A Curiosity.—The Boston Traveller has received what it calls "a great curiosity of the fruit kingdom." It is an admixture of apple and pear, which grew on a pear tree, the branches of which mingled with those of an apple tree. The fruit has partially taken the colour of the apple which grows upon the tree. It has the taste of the apple, but retains the shape of the pear.—The apple which grows upon the tree is of a deep red.

The Canadian Agriculturist for 1852.

We are happy to inform our readers and the public, that arrangements have been made by the Proprietor of this journal with the Board of Agriculture, which will ensure its continuance in an enlarged and much improved form, without enhancing its price. The prize essays received by the Board, with a condensed statement of all the Reports sent in by the Agricultural Societies of Upper Canada, will form a novel, and it is believed, most useful feature of this work. We shall confidently look for such an increased circulation, as will render the *Agriculturist* profitable for the future, whatever it may have been in the past. Upon the Farmers themselves will mainly depend the result. Full particulars will be given in our next.

Library of the Board of Agriculture.

The Secretary acknowledges the receipt of a donation of books, consisting of 3 vols. of *British Husbandry*, English Edition, from Wm. McDougall, Esq. As the formation of an Agricultural Library is a matter of much convenience and utility, any works having reference to Agriculture or its cognate branches, whether new or old, will be thankfully received.

The New Agricultural Statute will be found on another page, and should be closely examined by Officers of Agricultural Societies, previous to the annual meetings of Township and County Societies, which must now be held, pursuant to law, in the months of January and February respectively.

☞ We request the particular attention of our readers to the two papers which occupy a prominent place in our present number. Mr. Treadwell's article presents a pleasing and truthful picture of the general progress of Canada; inspiring yet brighter hopes for the future. Mr. Ruttan's paper embraces a subject in which man, and indeed, domesticated animals in general, have a deep concernment. No animal breathing by lungs, can live out healthfully the natural span of its existence, without a constant supply of pure, and sufficient air; and the public are largely indebted to Mr. Ruttan for the close and long attention which he has paid, and we believe, in a great measure, successfully, to the most economical and efficient system of warming and ventilating buildings suited to the climate of this country. We hope shortly to be able to lay before our readers a description of Mr. Ruttan's patent apparatus, illustrated by engravings.

Canada; Past, Present, and Future. Toronto, Thomas Maclear, 45, Yonge Street.

The fifth and sixth parts of this truly valuable publication are lying before us, and well do they sustain the high character for utility and correctness that has been deservedly earned by their predecessors. Part fifth is embellished with an engraved title page to Vol. 1; containing a well executed vignette, representing that stupendous phenomenon of nature—Niagara Falls. This part comprises the remaining description of the County of York, and the whole of Simcoe; with the continuation of a copious business Directory, which, when completed, will embrace the whole Province; and cannot fail to be exceedingly useful to other classes of the community, as well as the commercial. Part sixth, contains, of the neatly executed series of maps illustrating the work, one for the Counties of York and Simcoe, in which the Township lines and principal places are clearly defined. The letterpress embraces a description of the Counties of Waterloo, Huron, Perth and Bruce—a portion of Canada, enjoying a mild, salubrious climate, and possessing a soil of almost inexhaustible fertility. While this publication abounds in facts, amounting to absolute demonstration of the rapid progress and immense resources of this young and extensive country; we regard the scrupulous care and and ability evinced in the descriptive and statistical portions of the work, and the style in which it is "got up," as highly creditable to Canadian art. We would urge on our readers to purchase and read the book themselves, assuring them that there is more to be learned about this rising country than the most sanguine can imagine: and when they have done this, we would advise them to send the book to their friends in Old Fatherland, to enlighten the darkness and remove the doubts, which unhappily prevail there to an extent, as astonishing as it is unpardonable, with regard to the climate, natural capabilities, and social progress of this portion of Her Majesty's dominions.

Adelaide Academy.

This Seminary for the Education of Young Ladies, under the direction of Mr. & Mrs. Hurlburt, has just been removed to the capacious residence, for many years occupied by the Hon. Robt. Baldwin, in this City. The house being large and the situation pleasant and salubrious are circumstances highly favorable to the important department of physical Education; a department most intimately connected with, if not absolutely essential to, the intellectual and moral. The number of Teachers, we learn, has been increased, and other arrangements made for improving the system of Education pursued, and the reception of a larger number of pupils. The services of Mr. Carpendale, whose talents as an artist are now acknowledged by the public to be of a superior order, have been secured for Drawing, &c.; and the French language and literature are taught by a resident Parisian Lady, of undoubted attainments. What strikes us as constituting the chief recommendation of the routine of study pursued in this Seminary is the judicious blending of the useful with the ornamental. While Music, Drawing, &c., receive due attention, the more substantial and partically useful branches of knowledge, that explain the phenomena of nature and of civil and domestic life are equally cared for; History, both civil and ecclesiastical; with the elements of chemistry and natural philosophy, and the more useful and interesting portions of the wide field of Natural History are very properly included in the course of instruction. And we cannot augur otherwise than well for the mental and moral habits induced by a system of Education—applicable equally to both sexes—which embraces the evidences of Natural and Revealed Religion under such guides as Butler and Paley.

THRASHING MACHINE.

LETTERS PATENT.

Time and Labor Saved are Money Earned.

THE SUBSCRIBERS having secured to themselves the exclusive right of manufacturing and vending to others to use within the territory of Upper and Lower Canada,

SEVERANCE'S CELEBRATED IMPROVED HORSE POWER & THRASHING MACHINE one of the most valuable time and labour saving Machines ever devised by human ingenuity, respectfully inform the public that they have just completed a new and extensive Factory on Wellington Street, extending from Prince to George Street, which gives them more than double the accommodation they had in the old shops, which will hereafter, they trust, enable them to supply the whole farming community of the United Provinces with a Machine that will thrash and clean more grain in a day, with less expense and with greater cleanliness, than any other known invention—only requiring two horses.

We beg leave to say to our customers and friends, that we are again prepared to furnish those in want of Thrashing Machines with an article superior even to those heretofore manufactured by us.

Our long experience in making and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of work, and amount of it they can do, our Thrashing Machines are unequalled by any in use. And while the grain is thrashed clean and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill or any market.

All orders addressed to us or our Agent, WM. JOHNSON, will be promptly attended to.

Machines shipped to any port in Canada, and every one warranted to be as good as recommended.

Liberal terms of payment allowed.

B. P. PAIGE & CO.

Whereas, Letters Patent were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using or manufacturing any imitation article, as all infrigements will be dealt with according to the law of the land.

All genuine Machines will be accompanied by a Deed signed by B. P. PAIGE, the owner of the right, giving the purchaser the right to use or transfer the same. Without such a Deed no person will be safe in purchasing or using said Machines.

B. P. PAIGE.

Agent at Hamilton, Mr. Raswell Wilson.

Toronto, July 15th, 1851. 42-6m

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,

Near the Toronto Necropolis, East of Parliament Street

N.B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

CHEAP OIL FOR KITCHEN LAMPS.—Let all scraps of fat, (including even whatever bits are left on the dinner plates) and all drippings be carefully saved and put into an earthen crock, covered, and set in a cold place. When the crock is full, transfer the fat to an iron pot, filling it up half-way with fat; and pour in sufficient cold water to reach the top. Set it over the fire, and boil and skim it till all the impurities are removed, Next, pour the melted fat in a large, broad pan of cold water, and set it away to cool. It will harden into a cake. Then take out the cake and put it away in a cool place. When wanted for use, cut off a sufficient quantity—melt it by the fire till it becomes liquid, and then fill the lamp with it as with lard. It will give a clear, bright light, quite equal to that of lard and better than whale oil; and it costs nothing but the trouble of preparing the fat. We highly recommend this piece of domestic economy.

PRESERVING EGGS.—A patent for the following has been granted in England:—One bush. quick lime, 32 oz. salt, 8 oz. cream of tartar. These ingredients mix with as much water as will reduce them to the consistency that an egg, when put in, will swim. By this method, eggs have been preserved in a condition perfectly sweet for two years. So says the newspaper account. It may be well to try it.

The Canadian Agriculturist.

Published Monthly, at Toronto, C. W.

TERMS:

ONE DOLLAR A-YEAR IN ADVANCE.

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To Clubs and Societies.

Twenty-five Copies and Upwards . Half-a-dollar each

New Subscribers can be furnished with back numbers for 1848, 1849, 1850.

Bound Volumes, for 1849 and 1850, will be supplied for 5s. delivered at our office. The two volumes bound in one, price 8s. 9d.

All remittances should be forwarded to WILLIAM MCDOUGALL, Proprietor, Toronto.

All communications are expected to be pre-paid.

CANADIAN AGRICULTURIST.

" The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.

GEORGE BUCKLAND, } EDITOR,
WILLIAM McDOUGALL, } ASSISTANT EDITOR

VOL. III. TORONTO, DECEMBER, 1851. No. 12.

A FEW WORDS TO OUR SUBSCRIBERS ABOUT THE AGRICULTURIST FOR 1852.

The present number completes the *Agriculturist* for 1851. In thanking our subscribers and contributors for the support they have rendered us, during another year, we are desirous of saying a few words in reference to the next.

As intimated in our last, an arrangement has been entered into by the Proprietor of this journal and the Board of Agriculture, which it is hoped will prove mutually beneficial.

The Prize Essays, Reports, and transactions of the Board are to appear in the *Agriculturist*, which, for the future, will be entirely under the editorial management of the Secretary.

In order to meet the additional demand on our space, occasioned by the new arrangement, the size of the *Agriculturist*, commencing in January next, *will be increased one-third;*—printed on superior paper, with new type, *without any advance on the present terms:* viz.: *One Dollar per annum for a single copy, and to Members of the Agricultural Societies, only Half a Dollar!* These terms are always in *advance;* and if extra numbers are required, in order to keep pace with the matter accumulating in the hands of the Board, no further charge will be made to subscribers. Engravings will be given when the subject treated of requires such aid, and other important improvements are contemplated, which we will leave to speak for themselves.

The *Agriculturist*, in its enlarged and improved form will not only be one of the *cheapest* periodicals published on this continent, but will be, what we are most anxious to make it, a useful medium of communication between the numerous Agricultural Societies which now happily exist in Upper Canada.

The January number, containing Mr. Hutton's Prize Essay on Agriculture, will be sent to all subscribers now on our list; but none after-

wards, *unless directly ordered.* We will thank our friends to favor us with their orders, *as early as possible*, that we may be enabled to determine the extent of the edition likely to be required.

PREPARATION FOR WINTER.

We take the following from the *Genesee Farmer.* It is good, and we hope that our Canadian Farmers will take pattern by the correspondent and give a proper share of attention to the stock under his care during the winter months :—

Messrs. Editors:—Having received so much benefit myself, by being reminded in the *Genesee Farmer*, occasionally, of the importance of preparing for winter, I may be pardoned for endeavouring to do to others the same kindness I have so freely received. I always intended, as of course others do, to be fully prepared for every emergency, as much as possible; but, somehow or other, always happened to be a *little behind*, and had to do work in very unpleasant weather, which, with a little *forethought*, might have been done easier and better a little before. Then, often on account of the unpleasantness of doing out-door work, many things remained, entirely undone, and much loss was the consequence, and perhaps suffering to animals from cold and storm. One cold, stormy day in the winter of 1848–9, I sat by a warm fire, feeling rather uncomfortable as I thought of a barn that needed a little repairing, that I intended some time ago should have been done on the first fine day; but it had not been done, and the snow was covering my hay mow, and the barn looked like a snow palace inside—the stable that was not *quite* as tight as I knew it ought to be, and might very well have been. As I observed, I felt rather uncomfortable at these thoughts, and took up the *Genesee Farmer* to read a little and forget my bad feelings, when the first thing that attracted my attention was an article headed "*Prepare for Winter.*" I laid down the paper and really felt *cross* at being reproved in that way, and said something about its being very easy to write, but those that wrote such fine things didn't do any better than those of whom they were finding fault, with many more things of this character that I am not now foolish enough to repeat. But, after a time, my good sense began to show me the truth of the matter, and in a little while I thought it was about right. In about an hour I had resolved to go to work at the stable at once, in spite of the wind and the snow. So I put on my thick coat and mittens, called the boys to my assistance, (who wondered what new streak had taken me,) got hammer and nails and boards, and fixed up the stable in pretty good order in about two or three hours. Next day went at the barn, repaired it in every place where repairs were needed, or where an improvement could be made, shoveled out the snow, and then sat down to enjoy my reading, feeling, I can assure you, more like a man than I had felt before in many a day, comfortable in body and mind. I have endeavoured since to keep a little ahead of the times and seasons, and find great benefit from the practice. Now, brother farmers, if you profit by my example, it will add to your honour and happiness.

H.

COTTON GROWN IN OHIO.

We learn from the Cincinnatti Commercial that cotton of a fine quality has been grown in the garden of Major J. M. Brown of that city. Says the Commercial:

The balls were small, in comparison to the cotton we have seen on the Red River and the Mississippi, but the texture is the finest we ever saw in any country. We are of opinion that this country could produce cotton of a most peculiar kind, which could be worked into fabrics equaling the finest imported; indeed, we think this climate eminently calculated to produce such a kind of cotton as to almost rival silk! It it is useless to say that the small and delicate balls raised here can be as easily picked as those large ones on the Mississippi and Red Rivers, but they actually give more cotton, according to size, as one acquainted with cotton growing regions can see at a glance. We believe that an acre of ground in this country could be tilled and planted with cotton that would come up to two-thirds the worth of an acre so used in Mississippi. We learn that Mr. Thomas James, formerly of Mississippi, a cotton raiser, had the management of of this minature cotton crop, and is impressed with the success to such a degree that he will advise its repetition next year on a more extended scale.

BURNING OUT STUMPS.

Where there are but few stumps in a field, the stump machine cannot always be used advantageously, and the expense of applying it, would exceed the advantages. I have found that large stumps, which it is not practicable to remove by ordinary means, may very easily be got rid of by the following simple process:

After a period of dry weather, when the exposed portions of the stump are dry and tindery, cover it with a quantity of dry combustible matter, such as shavings, small sticks of wood, rubbish of any kind, and sprinkle over and through the mass, a few pounds of rosin, or a bucketful of tar. Over this, place a close and compact laying of turf, grass side in, in the same manner as the covering is applied to a coal pit, and ignite the wood through an opening at the base—a hole being left at the top to produce the requisite draught till the fire is fairly kindled. Manage just as you would were you burning a coal-kiln, and let the burning continue till the *stump and its roots* are completely consumed. The ashes will make a good top dressing for the adjacent soil, and the obstacle be removed effectually, and at a small cost. An hour's labour will do it.—*Germantown Telegraph.*

PRIZE REPORTS.

We have received several inquiries respecting the prizes offered by the Board of Agriculture, for the best Agricultural reports of *Counties*, in Upper Canada. The new agricultural statute, which was published in our last number—and should be carefully examined by all office bearers—requires that Township Societies shall hold their annual meetings in the month of January, and transmit their reports to their respective County Societies, in time for the annual meetings of the latter, which are to take place in February. County Societies have to transmit their reports, together with those of the Townships in each County, to the Secretary of the Board of Agriculture, on, or before, the 1st of April, in each year. The Board of Agriculture will give four premiums for *the four best County Reports.* The competition, therefore, lies between the whole of the County Societies in Upper Canada. The object of the Board is to elicit the truth with regard to the actual condition and capabilities of agriculture in this country. Societies are, of course, at liberty to engage what assistance may be deemed desirable in preparing their reports. We subjoin the conditions, as published in the last premium list:

AGRICULTURAL REPORTS OF COUNTIES.

	£	s.	d.
For the best County Report of the Agricultural Society of the County,	20	0	0
2d do.	15	0	0
3d do.	10	0	0
4th do.	5	0	0

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the various soils of the County; modes of farming; value of land; amount of tillage and average of crops; breeds of live stock; implements and machines in use; methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. All statistical information should be condensed as much as possible, and when practicable, put into a tabulated form. The main object of each report should be to afford any intelligent stranger that might read it, a concise, yet an adequately truthful view of the Agricultural condition and industrial pursuits of the County.—While all unnecessary particulars are to be avoided in the preparation of these Reports, *completeness* should, as much as possible, be constantly kept in view. The Reports must be sent into the Secretary of the Board of Agriculture on, or before 1st of April, 1852; and the premiums will be paid into the hands of the Treasurers of the respective County Societies, that may win the same. The Board will publish the whole, or such parts of the Reports, as may be deemed expedient.

THE LOW PRICE OF GRAIN.

Although we have had this year, in Upper Canada, a bountiful harvest, there is too much reason to fear that many of our farmers will not find that their business has been profitable. The almost unprecedented low price of wheat that now obtains, must, except in cases of extraordinary production, entail an actual loss on the growers, while other products of the farm are not selling at rates that will make up the deficiency. In a comparatively new country, where the condition of agriculture has scarcely begun to assume a systematic form, it is extremely difficult to fix the minimum price at which wheat can be raised; but our opinion is, taking any considerable area of Upper Canada, during a series of years at the present price of labour, that the farmer can receive a moderate remuneration for his labour and capital, in the production of wheat, at less than from four to five shillings a bushel, at the lake ports. Good wheat is now selling in Toronto as low as three shillings, and even less; while in several country markets in England, we have observed of late, the price as low for sound samples as 33s. per quarter, (8 bushels.) It is self evident that should the present depressed price continue for wheat, the Canadian farmer must look less to this article, for his pecuniary returns, than has been his wont: new productions must be sought for and tried; among such that hold out the greatest promise at the present, are in our estimation, Hemp and Flax. What the farmer requires in reference to these two important articles, for the growth of which the climate and much of the soil of this country seem admirably adapted,—is a market for his *raw produce.* Claussen's newly invented machine for partially reducing the fibre would be highly advantageous, especially to growers in the remoter districts. But before much could be done in this country to make the culture of Hemp and Flax profitable on a large scale, mills, with the necessary machinery, will have to be erected in different parts of the Province, for extracting the oil and preparing the fibre for the purpose of manufacture. A fair commencement and trial in this important department of industry, will, we believe, be made in earnest during the next season; and every real friend of his country must wish such enterprize success.

Notwithstanding the present depressed value of grain, the Canadian farmer, if his farm be clear of debt, may, by the exercise of prudence, manage to live, and that too, in a state of independence. He has no occasion for harrassing forebodings how he is to meet the demands of the landlord and tax-gatherer; and should self interest induce him to lay down a large portion of his arable fields to pasture, he is not harrassed with the pressing importunities of unemployed labourers. Let the worst come, and he can still manage to obtain food and raiment; and if the latter be not of the finest texture, it is the production of his own hands and soil, and well adapted to his wants.

How different are the condition and prospects of his brethren in the Old Country, under the low price system? With their produce suddenly reduced 25 to 30 per cent, and all fiscal burthens remaining nearly or quite the same, the tenant farmers of England have nothing but ruin staring them in the face; a result that can be obviated only in two ways; either by imposing a sufficient import duty on foreign agricultural productions; (and of this there does not, at present, appear the least probability,) or by reducing rents, tythes, and taxes to the level of the present depreciated value of farm produce. The latter must inevitably take place; but an inconsiderate and unfeeling obstinacy on the part of legislators and landlords may so retard its progress, as to work out the final ruin of a large number of industrious and well-disposed men.

In order to give our readers a view, somewhat in detail, of the present position of the British Farmer, we subjoin a statement from the pen of Mr. Samuel Jones, an extensive and enterprising agriculturist in the South of England, in reply to some remarks in a speech of Lord Palmerston at a recent Agricultural Meeting at Tiverton.

"I take them at what ought to be the amount of produce under good farming, and shall take as their value the prices under which the great change in Church property was based—the value of wheat, barley, and oats—under the Tithe Commutation Act, and compare it with the present value of the same:—

	Per Acre	Per Qr.	Per Acre.
Wheat	4 qrs. at	56s. 6d.	226s.
Barley	6 qrs. at	31s. 8d.	190s.
Oats	8 qrs. at	22s. 0d.	176s.
			592s.
	Present Value.		
Wheat	4 qrs. at	39s 11d	159s 8d.
Barley	6 qrs. at	22s 10d	137s 0d.
Oats	8 qrs. at	17s 10d	142s 8d.
			439s 4d.
Total diminished value in these crops			152s 8d.

or on each crop a diminish of 50s. 10½d. per acre. I thus clearly prove the diminished value of an acre of wheat, barley, and oats is 50s 10½d per acre. I would, my Lord, leave it to your own consummate ability, deep research, and practical knowledge to prove how much the diminished expenses of production really are; but fearing your Lordship may shrink from such a task, I will endeavour to assist you, leaving it to your Lordship to correct any errors or misstatements; but at the same time permit me to say I shall deem your silence on the subject as a ready and candid admission of the truth of my statement.

And he goes on as follows:—

"The diminished cost on seed wheat, barley, and oats, is 2s. 7d.

"'The wages of our labour less.' How and why is it so, my Lord?—unless your accursed system has lessened the demand for labour, which I will take at 10 per cent. The cost of labour per acre has been about 25s.; reduction on labour, at 2s. 3d. per acre.

"'Manure cheaper!' How is this, my Lord? This proves the lessened demand for the article, and that the lands are being deteriorated in value. I cannot allow any deduction under this head.

"'Poor rates less!' This I deny, and below beg to refer you to a statement upon which my denial is based. Abatement of rent, say 10 per cent. taking the average amonnt of rent at 20s. per acre, the deluction would be 2s. per acre, making a total reduction in the cost of production of 6s. 10d. per acre.

"Poor's rates. Average amount of poor and county rates for seven years, commencing 1840, to 1846, is £7,643,208, to pay which, with wheat at 7s. per bushel, will require 21,839,268½ bushels.

"Average of poor and county rates, three years, 1847, 1848, and 1849, £8,689,370, to pay which, with wheat at present value of 5s. per buchel, will require 34,757,480 bushels.

Mr. Jones concluded by saying:—

"Thus we find the increased cost, if taken in wheat, to be 12,918,202 bushels, at 5s. per bushel. As to the increased produce arising from the 'progressive development of science as bearing upon agriculture, he is enabled to produce a greater quantity out of the same extent of land than he produced before.' All practical men, my Lord, are well aware that all extra produce under present prices is raised at an increased loss. You further state—'I think the farmer even will find that if he strikes a fair and accurate balance, his loss is far less than he imagines

it to have been.' What amount of loss, my Lord, could you have fancied we had thought it was when I prove it amounts to 50s. 10½d. per acre after deducting the advantages arising from diminished expences? In this loss, bear in mind, I have not taken into account the diminished value of peas and beans, beef and mutton, which would amount to 20s per acre on the two shifts of fallow by pulse and seed crop. After striking a fair and accurate balance, my Lord, I find the loss on a farm cultivated on the four-course system to be as follows:—

	Lesssened value of produce.		Advantages by diminished cost.	
	s.	d.	s.	d.
Wheat - - - - -	50	10½ per acre	6	10 per acre.
Barley & Oats - -	50	10½ per acre	6	10 per acre.
Beans, Peas, Fallow	40	0 per 2 acres	13	8
	141	9	27	4

Thus we find our produce has been reduced in value 114s. 5d. on the four acres after striking a fair and accurate balance by deducting the full amount that can be allowed for lessened expenses of cultivation, or a clear loss, or lessened value of agricultural produce of 28s. 7½d. on every acre of arable land."

[The following communication would have appeared in our last, but was crowded out. Mr McCormick's machine obtained a medal at the World's Exhibition, and we have no doubt from what we have seen of its working on the extensive plains of the West that, under similar circumstances, it is a very advantageous and efficient implement. Hussey's Reaper has since been tried in England, with apparent favor. We doubt, however, whether the very high hopes expressed by some sanguine, but not over practical minds, respecting these Reapers, will ever be realised in many districts of the British Islands, where the fields are too small, and the surface too uneven, for their advantageous action.]

MR. MCCORMICK'S REAPING MACHINE.

To the Editor of the Canadian Agriculturist.

SIR,—I see by the Report of Prizes awarded at your late Provincial Fair, held at Brockville, that a premium was awarded to Hussey's Reaping Machine, a highly finished one, got up for the occasion, exhibited with one of Mr. McCormick's, (common reapers, such as are sold for use,) the same as took the great prize recently at the World's Fair in London, and created so much excitement among English farmers. Both of these machines were operated in presence of a committee on the part of the World's Fair, many gentlemen of distinction and several hundred farmers, on two occasions, were in London. On the first occasion the day was rainy, and the wheat green. Hussey's machine clogged, trampled down the grain and was taken off from the ground, McCormick's worked to perfection, and drew forth cheer after cheer from the assemble l multitude. Anotner trial has since been had under more favorable circumstances, with the grain in a good condition for cutting, and after a full and fair trial, the great medal was awarded to McCormick's, upon the ground that it cut with much less horse power, raked off at the side, enabling you to cut a whole field without binding, and cut when the grain was too wet to bind, economizing in time and labor, and that it had a reel to draw the grain to the sickle and cut leaning grain much better. Hussey's reaper raking off at the side and requiring the grain to be bound as fast as cut, and having no reel could not cut leaning grain without covering the swath and could only cut where the wind was blowing the way the machine was going by driving upon a trot upon which pace the horses could not hold out. Since these trials, McCormick's reaper has had several useful trials at contentions in different counties got up for the occasion by distinguished men, at each of which large numbers of farmers and many noblemen have been present, where it has given entire satisfaction. The editor of the *London Times*, on one occasion, made a journey of one hundred miles to see it work, and says it will cut all the wheat of England. The Agricultural Society of Scotland have sent for it at their own expense to be worked there. One house in London has undertaken to make five hundred reapers for the next harvest on their own account. This reaper has twice taken the highest premium at the New York Fair, (Hussey's being present,) and obtained the great medal at the National Institute, New York.—This is the great machine in the West. Only one of McCormick's improved Virginian reapers has been worked in Canada, and that on Dundas street, near Toronto, and the preference over all other machines is given to it. Your committee must have awarded the premium to Hussey's upon the ground of its superiority in mechanical execution, (which does not apply to the machines sold for use,) and not from any knowledge of its practical workings. He must be a bold man knowing the scrutinizing tests which the machines have undergone in England, who without any knowledge of the real merits of McCormick's reaper, Thos. J. Paterson, of Rochester, N.Y.,

would set his judgment against those of the farmers of England and the United States.

Brockville, Sept 27, 1851.

VITAL STATISTICS OF ENGLAND.

Some of our readers may not be aware that there now exists a system of registration in England, by which the number of marriages, births, and deaths, is ascertained with the greatest accuracy. The Registrar-General publishes these returns quarterly,—from the last of which we select the following facts. The births continue to increase rapidly, and the mortality is below the average. If the surplus cannot obtain profitable employment at home, they can emigrate to the Colonies, where there is generally ample verge enough for all. We have here, in Canada, abundance of room, a prolific soil, a salubrious climate, and the greatest system of water power, and communication with the Ocean, by our majestic rivers and lakes, of any portion of the world; and where intelligent and virtuous industry cannot fail, in a few years, to attain to competence and independence.

We find from the Returns of the quarter ending Sept. 30th, 1851, that 38,498 marriages were registered im England and Wales; and 150,584 births during the same period, and 91,600 deaths; leaving an excess during the quarter of 58,984 in the population.

"Emigration.—It is well known that up to a late period there has been a constant immigration of the Irish and Scotch into England, which appears to have been fully equivalent to the emmigration of the English into the colonies and to foreign parts. 85,603 emigrants left the ports of the United Kingdom at which there are Government emigration officers in the quarter ending September 30th, 1851. This is at the rate of 930 a day; 6,510 a week. 13,963 sailed from Irish ports, 4,378 from Glasgow and Greenock, and 67 262 from three English ports, namely, 10,062 from London, 2,799 from Plymouth, and 54,401 from Liverpool. Of the total number 68,960 emigrants sailed to the United States, 9,268 to British North America, 6097 to the Australian Colonies and 1,278 to other places. The emigration has hitherto been greater in 1851 than it was in the corresponding quarters of 1850."

Some of the croakers against the Great Exhibition predicted a pestilence from the mass of human beings which it was to accumulate in London, but although the mass was collected to an extent beyond all reasonable calculation, Messieurs the prophets of evil have been proved to be in the wrong—we had almost said disappointed. The report shows that notwithstanding the unparalleled influx of temporary residents during the three months of July, August and September, "London has enjoyed a degree of health above the average in the last summer quarter. 13,064 deaths were registered, which is a less number than was registered in the summer quarters of 1847 and 1858, and half the number (27,172) registered in the summer quarter of 1849, when cholera was epidemic."

The Registrar-General concludes his remarks by the following reflections:—

"The present movement of the population is in many respects remarkable. The free admission of grain, fruit, and meat since the scarcity is equivalent to an addition to the country of a vast tract of fertile soil, which calls for cultivators, and, as the land is abroad, for agricultural emigrants who prefer the cheap though distant lands of America to the high-rented farms of Ireland, no longer possessing a monopoly for its production in the English market. The fact deserves attention that while the United Kingdom has been importing food in unprecedented quantities it has been sending out swarms of emigrants from the population, of which the marriages and births promise to keep up a perpetual and increasing supply."

CLOSE OF THE WORLD'S INDUSTRIAL EXHIBITION.

On Saturday, October 11th, this unprecedented scene closed to the public; but its official termination did not take place till the following Wednesday, in the presence of the Royal Commissioners, exhibitors and distinguished persons, specially invited, amounting to some 30,000 or 40,000 persons. We subjoin some account of the closing scene, with a number of facts that cannot fail to be interesting to our readers. It is highly satisfactory to find Canada coming out of a world's competion with so much honor and success. Twenty-three medals have fallen to our lot; the names of the fortunate winners will be found below, together with the articles rewarded.

Precisely at twelve o'clock, the Royal Commissioners, headed by the Executive Committee, moved in a species of procession from their apartments to the platform. They were accompanied by the Bishop of London in his robes, and on their appearence the immense assembly arose and welcomed them with loud cheers, while the choir performed the first verse of the National Anthem. Having taken their seats, Viscount Canning, on behalf of the Juries, rose and read a report of their proceedings, from which we extract the following account of the two kinds of medals conferred, premising that it was at first intended to have had three different kinds, but that one had been suppressed—

"Of the remaining two, they suggested that one (the prize medal) should be conferred wherever a certain standard of excellence in production or workmanship had been attained—utility, beauty, cheapness, adaptation to peculiar markets, and other elements of merit being taken into consideration according to the nature of the object; and they recommended that the medal should be awarded by the Juries, subject to confirmation by the groups.

"In regard to the other and larger medal, they suggested that the conditions of its award should be some important novelty or invention or application, either in material or process of manufacture, or originality com-

bined with great beauty of design; but that it should not be conferred for excellence of production or workmanship alone, however eminent; and they further suggested that this medal should be awarded by the Council of Chairman, upon the recommendation of a Jury, supported by its group.

H. R H. Prince Albert replied to the address of the Juries in a neat and pertinent speech, of which the following was the concluding paragraph:—

"In now taking leave of all those who have so materially aided us in their respective characters of Jurors and associates, foreign and local Commissioners, members and secretaries of local and sectional Committees, members of the Society of Arts and exhibitors, I cannot refrain from remarking, with heartfelt pleasure, the singular harmony which has prevailed among the eminent men representing so many national interests —a harmony which cannot end with the event that produced it. Let us receive it as an auspicious omen for the future: and, while we return our humble and hearty thanks to Almighty God for the blessing he has vouchsafed to our labors, let us all earnestly pray that the Divine Providence which has so benignantly watched over and shielded this illustration of nature's productions, conceived by human intellect and fashioned by human skill, may still protect us, and may grant that this interchange of knowledge, resulting from the meeting of an enlightened people in friendly rivalry, may be dispered far and wide over distant lands; and thus, by showing our mutual dependence upon each other, be a happy means of promoting unity among nations, and peace and good will among the various races of mankind."

The Prince was dressed in plain black, and wore the blue scarf of a Knight of the Garter. He was loudly cheered at the close of his reply.

The Bishop of London then offered up an appropriate prayer.

The ceremonial concluded with the very effective performance of the "Hallelujah Chorus," in which a prominent part was taken by the powerful horn which has so often resounded through the Crystal Palace.—The Prince and Royal Commissioners at its conlusion took their departure amid the hearty cheers of the assemblage. As soon as they were gone the barriers were removed, the seats and other temporary arrangements were swept away, and the stroke of hammers in every direction told that the work of removal and demolition had fairly commenced. The great Exhibition is now, therefore, fairly at an end.

We add here some curious details in the statistics of the Exhibition, commencing with a view of the receipts and expenditure as follows:—

LIABILITIES.

The liabilities incurred, so far as they have been at present ascertained, are as follows:

	£.	s.	d.
To Messrs. Fox and Henderson, for the building,	79,800	0	0
To Messrs. Munday for rescinding of contract,	5,004	0	0
Extra galleries, counters, and fittings,	35,000	0	0
Management, including printing, &c. up to may 1st,	20,943	0	0
Police force,	20,000	0	9
Prize fund,	20,000	0	0
Management during the Exhibition,			
Total,	£170,943	0	0

TOTAL RECEIPTS.

The income of the establishment is as follows, up to the close of the Exhibition:—

	£.	s.	d.
Public subscriptions,	94 344	0	0
Privilege of printing,	3,200	0	0
Privilege of supplying refreshments,	5,500	0	0
Amount received for session tickets up to May 1st,	40,000	0	0
Royalty of 2d. per copy on catalogues			
Total funds in hand on the 1st of May	£113,044	0	0
Amount received at the doors up to August 30,	252,141	9	0
Ditto up to the end of September,	62,007	12	0
Ditto up to Saturday, October 11,	41,922	11	7
Grand Total,	£469,115	13	0

The following is a monthly statement of the visitors:—

In the month of May, the number of visitors was	734,782
In June,	1,133,116
In July,	1,314,176
In August,	1,023,435
In September,	1,155,240
In October, up to the 11th instant,	841,107
Grand Total,	6,201,156

Among the visitors the children of no fewer than 510 schools, amounting to 43,715 pupils, visited it; and the kind feeling exhibited by the wealthy classes towards the poor may be further inferred from the fact that nearly 11,000 persons, in addition, were treated to a visit to the exhibition at a a total cost of £2,735 paid for admissions, to say nothing of the much larger sums disbursed for their conveyance to and from the Crystal Palace.

The consumption of food in the Crystal Palace was very great. The ordinary sale of cooked meat, in the shape of sandwiches and luncheons, averaged on the Monday and Tuesday about sixteen cwt. On Wednesday, Thursday and Friday, the quantity was doubled, and upwards of a ton and a half of beef and ham was cut up in thin slices for the hungry visitors, and this independently of the large sale in the eating and west refreshment courts, the statistics of which have not been ascertained. It is impossible to form any estimate of the immense quantities of other refreshments in the shape of tea and coffee, ginger beer and lemonade, buns and cakes, which the Exhibition has furnished. The profit of the cooked meat alone must have exceeded £30,000.

LIST OF THE NUMBERS OF MEDALS GRANTED TO VARIOUS COUNTRIES.

United Kingdom	1190	South Australia	4
Belgium	115	Ceylon	4
United States	99	Egypt	3
Switzerland	71	Nassau	3
Russia	58	Tunis	3
India	46	Malta	3
Spain	41	Mauritus	3
Saxony	39	Nova Scotia	2
Tuscany	30	Trinidad	2
Canada	23	New South Wales	2
Wurtemburg	21	New Zealand	2
Turkey,	20	Bahamas	2
Sardinia	19	Labuan	2

Bavaria	18	Lubeck	2
Netherlands	16	Meeklenburgh Strelitz	1
Portugal	15	Frankfort-on-Maine	1
Van Diemen's Land	12	Luxemburg	1
British Guiana	9	Holland	1
Algeria	9	Brazil	1
Cape of Good Hope	8	Jersey	1
Denmark	8	Grenada	1
Rome	8	Western Africa	1
Duchy of Hesse	8	St. Domingo	1
Sweden and Norway	7	Hamburg	5
China	5	Borneo	1

List of Parties, resident in Canada, to Whom Her Majesty's Commissioners have granted the Prize Medal:

No. in Catalogue.	Name of Exhibitor.	Object Rewarded.
5.	Hon. J. Ferrier,	Quality of iron.
10.	Montreal Mining Co.,	Copper Manufacture.
35.	D. Christie,	White Wheat.
	Arthur Fisher,	Maple Sugar.
41.	D. Jones,	White Peas.
40.	D. Limoges,	White Peas.
	G. Reinhardt,	Ham.
126.	J. Robb,	Biscuits.
38.	J. Simpson & Co.,	Wheat Flour.
64.	B. Smith,	Hops.
51.	R. Squair,	Oatmeal.
38.	R. M. Watts,	Polish Oats.
80.	Commission,	Collection of Woods.
75.	Read & Meakins,	Hard Woods.
181.	Perry G., & Brothers,	Fire Engine.
139.	Wm. Gamble,	Blankets.
186.	J. Patterson,	Do.
109.	Tetu, C. A.,	Porpoise Leather.
113.	Morris, R.,	Set of Double Sleigh Harness.
33.	J. T. Palsgrave,	Printing Types.
86.	J. Baley,	Pails.
119.	W. Dunn,	Porcupine Quill Chair.
	R. Marshall,	Dinner Mats.

EXTRAORDINARY PRODUCE.

A single Apple tree (Lemon Pippin,) belonging to Captain Shaw, near this city produced this year, the extraordinary amount of 55 bushels! The Captain is well known as a very successful exhibitor at our Provincial Shows, in various departments of agricultural produce. We observed on his farm the last season some heavy crops of roots and grain. His extraordinary pumpkins have excited the astonishment of all beholders; weighing sometimes as much as 260 lbs. each; and he had this season a Cabbage, of the Quintal variety, which attained to the weight of 34 lbs! These few facts are sufficient to show what can be done in the neighbourhood of Toronto, and indeed in most parts of Canada, by selecting pure seed of the most suitable kinds of plants, and subjecting them to a system of judicious cultivation. Cobbett truly observed, "that the soil was always grateful, *when it had something done or given to it, to be grateful for;*" a truth, almost self evident, yet lamentably misunderstood, or at least neglected, by too many sons of the soil.

AMATEUR FARMING.

The following observations from a speech of SIR E. L. BULWER, recently delivered before a meeting of the Herts Agricultural Society, are particularly deserving of attention at the present time, both in the Colonies as well as in the mother country. *Real* science must undoubtedly prove beneficial to agriculture, when it can be practically applied, as in other industrial arts. The man, however, who farms for a livelihood has to look to the *cost* of an experiment, *compared with the pecuniary value of the result.*—Farmers, in general, are not slower than other people in adopting improvements, if a reasonable chance of *profit* be afforded thereby. It fortunately happens that amateur farmers are mostly not dependant upon the profits of their farms for their living, and many pursue this rural and primitive art simply as a means of healthful recreation. Few, if any of these amateur gentlemen in England, who are so loud in the praise of science and improvement, ever condescend to enlighten their less sanguine and wealthy neighbors on, what after all is the main thing,—the profit or loss of the whole matter.—Till this is done in a satisfactory manner; prudent, practical farmers, will continue to place but little confidence in this class of their would-be-instructors.

"Gentlemen with large pecuniary resources, and who are to a great extent indifferent to pecuniary profit, have cried up this system: but the books have been carefully kept under lock and key, and therefore they may say what they like. But even were we perfectly satisfied as regards the land and cattle, it is too much to suppose that we should, upon mere assurances, and without vouchers, assume that it answers in business, and pays back the cost. (Hear, hear.) It is generally found that the experiments made by amateur farmers, although most praise-worthy, will be slow in their progress until some spirited practical tenant farmer takes them up, and finds them to be not only scientific, but actually paying and profitable. The Government has been lavish enough of its advice and its lectures, and they would add to their liberality by going a little further. If, for instance, the State would take, at a fair rental, in different districts and on different soils, certain farms, and would invest such capital only as a spirited farmer might be supposed to possess—if they would on each of these farms place a practical farmer and

a first rate scientific chemist—if periodical returns were made out of the expenditure of public money on these farms, then we should have at least all of which chemistry and science is capable of accomplishing. We should unite practical knowledge with chemical science, and obtain what we cannot get from amatuer farmers, methodical and exact accounts of the price and cost of these experiments; and if it should be proved, as we have been told, that large profits can be realized at present prices, then we shall receive, for the first time, something like authentic facts to guide our efforts and stimulate our researches. (Hear, hear.)

A PATRIOTIC EXAMPE.

We feel much pleasure in transferring to our columns, the following piece of information from a city contemporary. The excellent and respected President of our Provincial Association is evidently not unmindful of the important dogma, now happily recognised in all civilised and christian communities; "that property and station have their duties, as well as their rights." May the spirit of this example live.

"We are informed on good authority, that Thomas Clark Street, of Niagara Falls, President of the Agricultural Association of Upper Canada, gave an order before he left England, to the Colonial Agent of Canada at the World's Exhibition, to purchase whatever he would think would be useful to the Association, at his, (Mr. Street's) expense. This is indeed a noble act of the worthy President; and we are sure that the Association and the public generally, will not fail to appreciate it.

SCALDING HOGS.

I saw an article some time since, in the *Agriculturist*, on scalding hogs, and I thought I would send you a description of my mode of proceeding in such work.

I have a scalder, or large wooden tub, with a boiler in it, by which we heat the water by building a fire within the boiler, which saves the trouble of bailing off the water after the tub is filled, and a much more convenient way it is.

I will give you a description of it as well as I can. It is five feet three inches long, two feet wide at the top, and twenty inches to the boiler from the top of the tub, the boiler being a long cylinder of copper or sheet from eleven inches in diameter, reaching from the outside of one end of the tub to nearly the inside of the other end, where it has a shoulder; and the rest is the size of a common stove pipe, reaching through the end of the tub, to put a pipe on for the draft and smoke to pass through. The larger end should be even with the outside of the tub, and have a door with a fire hole in it, attached to the tub. Some are made wider at the top than at the bottom. Mine is so, being only sixteen inches at the bottom, and sixteen inches to the bilge, being the same width at the top of the tub. It should have a rack, or something like a ladder, over the boiler to keep the hog from laying upon it and should have a wooden roller put inside the tub at the end where the boiler door is level with the top of the tub, to assist in getting out the hog, and have another ladder with rollers, to pull the hogs on, with a couple of hooks on one end to hold it to the tub.

The wood used for fuel need not be more than two feet long. It can be heated in an hour or two, if the pipe draws well. A tub of this size will scald a hog that will weigh 700 pounds. It should have a lid to it, to make the water heat quick. Mine is made of cedar plank two inches thick, with two planks on each side, and three iron hoops, one on each end, to go all the way round the tub, and one in the middle to lap over the top of each plank.—*Rural New Yorker.*

HOW TO SAVE POULTRY MANURE.

Having learned the value of poultry manure, we suppose now, our readers would like to know what is the best method to save it.

First, build you a poultry-house, if it be no more than a rough scaffolding of poles or slabs, laid upon crotches, forming a double pitch roof, with end boards in winter, to keep out the wind and driving storms. Under this, place parallel roosts; the manure during the night, then, will all drop down in a narrow row beneath. Here place light loam about a foot deep, rather wider and longer than the roosts, and give it a sprinkling of plaster of Paris an inch thick. When this is covered an inch deep with manure, give it a layer of loam four inches deep, and another sprinkling of an inch of plaster, and so continue. In the spring, mix all well together, keep it free from the rain, and use it at the rate of one pint to a hill of corn, or in a corresponding quantity for cucumbers, squashes, pumpkins, melons, peas, onions, strawberries, or any other fruit, vegetable, or grain, requiring rich warm manures, and, our word for it, you will have a large crop of a superior quality. Thus you will become one out of the many who is desirous to benefit himself, and assist in saving more than a million of dollars annually to the country.—*Am. Ag.*

TREES AS POSTS FOR WIRE FENCES.

Messrs. Editors,—Would it not be a good idea to plant trees in the corners of fences, to serve as posts for a wire fence when sufficiently grown? I think they might be used for that purpose, answering at the same time for shade and ornament. There are many places now where a trial might be made. The staples for keeping the wires in their places, would need to be made differently from those used for posts. They should be formed with a hook on one end and a

screw on the other, that they may be screwed into a gimlet hole bored in the tree, and the wires hooked on, to be unfastened and the staples drawn out as the tree increases in size. But there may be objections to my plan which I have not thought of, and perhaps some better qualified will give their views on the subject.—*Rural New Yorker.*

KNOWLSON'S COMPLETE FARRIER.

A SPRAIN IN THE COFFIN JOINT.

This is often a grievous disease, and it is difficult to discover where the lameness is. It is often neglected till the joint grows stiff, and then the horse pitches upon his toe, and is afraid of bearing any weight on his foot. If you press with your thumb in the hole in the horse's heel, and upon the cornet of his foot, you will soon discover whether the hurt is in the Coffin Joint.

When people cannot tell the cause of a horse's lameness, they often say that he has got sprained in the coffin. In my opinion it is better not to doctor a horse than to apply stuff to you know not what. If people would have a little patience, most lamenesses would soon show themselves, especially a sprain in the coffin joint, for it would raise a ring round the cornet of the foot, not much unlike a ringbone, but closer to the foot.

The first thing to be done is to draw a little blood from the spurn vein, then mix an equal quantity of oil of bays, and oil of origanum, beat well together, and rub well all round, just above the hoof. Apply this for three or four days together, and if no better, you must have recourse to repeated blistering.

A SPRAIN IN THE BACK SINEWS.

This kind of sprain is more frequent among horses than any other, and is so common that I need not describe it, but only inform you how to cure it.

If it be recent, bathe the leg with a little hot vinegar, or verjuice, with a little saltpetre dissolved in it, and put round it a proper bandage: or, curriers' shavings, wetted with a composition made of vinegar, spirits of wine, and a little tar, and laid on the swelling with a pretty tight bandage round them, will be of great use. Take it off once a day, and soak the shavings again, or get fresh. Injuries of this kind must not be expected to be removed immediately. Rest is absolutely necessary, and turning the horse out to grass would be of great service as soon as the swelling disappears, but not before. If these methods fail, the next thing is to blister; for I have known blistering succeed when all the former have failed. The last thing to have resourse to is firing.

SPRAINS OF THE KNEES AND PASTERNS.

The knees are liable to many misfortunes besides sprains. The Speedy Cut is done by striking one foot against the other leg, just below the knee, and is frequently done by a horse that trots high. Sometimes it swells very much, and is taken for a sprain. Sometimes horses get kicked by others, or meet with some other accident which causes a swelled knee, which is sometimes bad to remove. A poultice made as follows will have a great tendency to remove the swelling. Take

4 oz. of Tar.
4 do. Spirits of Wine.
3 do. Hogs' Lard.

Melt these together over a slow fire, and be careful not to set fire to them, and put in as much linseed-meal as will make them of a proper consistence. This is a very good poultice for many other kinds of swellings, and although but little known hitherto, I hope that it will be found of great service. If any substance be left which will not give way to this method, you must lay on a little blistering ointment.

THE BONE-SPAVIN.

Although this is a common disorder among horses, yet it is little understood by either breeders or farriers. The Bone-Spavin is a bony excrescence, or hard swelling on the inside of the hock in a horse's leg, and sometimes owes its origin to kicks and blows, and sometimes to natural causes; but in the former case it is much more easily cured than in the latter; and those that grow spontaneously on colts, or young horses, are not so bad as those that appear in horses, that have arrived at their full strength and maturity. In old horses they are generally incurable.

Our horse-dealers and jobbers make a second kind of Bone-Spavin, which they call a Jack, but this is only a polished name for a Bone-Spavin, as there is no difference between the two. Some call it a Dry-Knot, but still it is a Bone-Spavin.

Sometimes the horse is very lame when the Spavin is first coming out, and when it has come out is better for some time, and then grows lamer again as the bone hardens. I would advise you to apply a blister as soon as you have any suspicion that a horse is likely to put out a Spavin, and to continue blistering, every fortnight, for some time, by which means you may stop a Spavin in a young horse.

Cure. Mild medicines should be used if the horse is young, as they will in a short time wear the tumour down by degrees, which is much better than trying to remove it at once by severer methods, which often have a very bad effect, and produce worse consequences than those they were intended to remove. But in full-grown horses they are absolutely necessary, and accordingly various authors have given prescriptions for compounding medicines to answer the intention; but I will not enumerate them here, as the blistering ointment given in the last chapter will be found to answer better for young horses than anything yet found out; and for an old horse, or one that has come to his full strength, you may add a dram of sublimate, finely powdered, to two ounces of the blistering ointment, and stir it well up.

Before these are applied, the hair must be cut

off very close, and then the ointment laid very thick on the affected part. It is proper to make the application in the morning, and to keep the horse tied up to the rack all day without any litter; but at night he must be littered in order that he may lie down; and to prevent the blister from coming off, put a white pitch plaster over it, and tie it on with broad tape.

When the blister has done running, and the scabs begin to dry and peel off, it should be applied a second time in the same manner as before, and the second will have a much greater effect than the first.

When the Spavin has continued long, the blister will have to be often renewed, perhaps five or six times; but it is necessary to observe that after the second time you must not be less than three weeks before you lay on the third, or you will destroy the roots of the hair and leave the place bald. By these means Bone-Spavins may often be cured; but when they fail, recourse must be had to firing.

Before you fire a horse for the Bone-Spavin, be careful to take the vein out of the way, for it generally lies over the Spavin, and you cannot fire deep enough to come at the callous substance without its removal. In order to destroy the vein, cut a nick through the skin upon it, just below the Spavin, and another just above it, and put a crooked needle under the vein, and tie both ends; then cut the vein across between the tyings, both above and below, and you may either draw the piece of the vein out or leave it in.

Let the iron you fire with be pretty sharp; cut four or five nicks upon the bone, and let the iron take hold of the superfluous bone, in order that it may waste away by mattering; and when you have done, lay on some white pitch, pretty hot, and put a cloth round it to keep it on. In three days open the place, and dress it with yellow basilicon.

Some people put lunar caustic, or sublimate, into the places; but it is a dangerous practice, and often lames the horse for ever. I wish those who have got a horse that has a Bone-Spavin to make a full trial of the directions here given, and I trust they will find them to answer the purpose as well as any hitherto found out.

A CORB.

This is a soft swelling that rises out of the joint on the back part of the hind-leg, just below the hock, and mostly lames the horse, besides being unpleasant to the eye. To cure it, strike a few holes into it with a pricker, made so as just to go through the skin, then rub well with oil of origanum, and blister as often as needful.

A RING-BONE.

This is so well known that I need not describe it, but only point out the remedy; yet I must observe that a Sprain in the Coffin is sometimes taken for a Ring-bone when it causes a rim to rise just above the foot. Ring-bones come out from the pastern, between the fetlock and the foot; but if the pastern is long, they are nearer the foot.

They will generally yield to the same method of cure as a Corb, especially if just coming out but if not, recourse must be had to firing.

Splents, Osselets, or any other bony or fleshy substances on the legs, may be cured in the same manner. A Splent on the shank-bone is only a grievance to the eye, and will go away of itself when the horse comes to age; but the sooner those that are near the knees or the tendons are removed the better.

THE STRANGLES.

Most horses have this disorder while young, but at seven years old they are out of danger. There are two kinds of this disorder. The common kind is a swelling under or between the jaw bones. The other, which is called the bastard kind, is much the worst. Sometimes swellings appear on the buttocks, break, and discharge matter for a few days, and then dry up, after which others appear in a fresh place in the same manner. I have known horses that have had this complaint eight or ten weeks.

The common kind begins with a swelling between the jaw-bones, which sometimes extends to the muscles of the tongue, and is often attended with so much heat, pain and inflammation, that before the matter is formed the creature swallows with the utmost difficulty.

Symptoms. The Strangles is attended with great heat and fever, a painful cough, and great inclination to drink, without being able. Some horses lose their appetites entirely, and others eat but very little, occasioned by the pain resulting from the motion of the jaws in chewing and swallowing. When the horse runs much at the nose, it is not a good sign.

Although this disease is very troublesome, it is not dangerous, except when the swelling turns upwards against the windpipe and gullet, and then there is danger of suffocation if it do not break soon.

Cure. The Strangles is not properly a disease, but a discharge common to young horses, and therefore it follows that the discharge must be promoted in order to throw off the offensive matter. The best method of doing this is to keep the swelling always soft by soaking it with softening ointment, such as marshmallows, or elder ointment. I have known oil of swallows, with a little spirits of hartshorn in it, be very useful in bringing the swelling forward and causing it to break. A cloth in the form of a cap, put on the horse's head, and stuffed with wool to keep the swelling warm, will be of great service. Some people apply a poultice, but there is no need of this if the above be properly used. Give plenty of warm water, with a little meal in it; for in this disorder a horse cannot swallow dry meat enough for its support.

Sometimes the Strangles gather four or five times, and break in many places; and you must

observe that if the orifices are not wide enough, they must be opened with the point of a knife, and by this means it will be prevented from breaking out in so many places. After the swelling appears, it will be five or six days before it breaks and discharges. There is always a small discharge at the nostrils, but it is little or no grievance to the horse.

When the swelling is broken, and the orifice of a proper size to discharge the matter, dress with the following ointment spread on tow.

Take Yellow Rosin and Burgundy Pitch, of each one pound; Honey and Common Turpentine, of each half a pound; Bees' Wax, four ounces; Hogs, Lard, one pound and a half; and of Verdigrise' finely powdered, one ounce. Melt the ingredients together, but do not put the Verdigrise in till nearly cold, and keep stirring all the time till cold, or the Verdigrise will fall to the bottom.

This is one of the best salves for wounds that has been found out, and especially for old ones.

The Bastard Strangles requires the same kind of treatment, but it is proper to give the horse a dose or two of calomel physic also.

Draining by Machinery.—A series of interesting experiments have been made at the farm of Mr. Ruck, Down Ampney, Gloucestershire, for the purpose of proving the superior advantages of draining land by machinery, both in time and expense, as compared with manual labour. The machine is an invention of Mr. Fowler, of the firm of Fowler and Fry, of Bristol. The field selected for the experiment consisted of stiff clay land, exceedingly dry on the surface, and crossed by a gravel path. The machine is formed by two horizontal iron frames, nine feet long, placed two feet apart, supported at one end by three wooden rollers, of one foot diameter, turning on axles; at the other end by two cart wheels. At the end nearest the cart wheels, and between the two frames, is supported a perpendicular plough or coulter of iron, seven feet in height, nine inches broad, and three quarters of an inch thick; the side of this plough or coulter, intended to cut and drain, has a sharpened edge; the other side is formed into a rack, which can be raised or depressed at pleasure, by a pinion or winch working into it, so that the plough is capable of being placed in the ground at any required depth. At the bottom of this upright plough or coulter is a socket, in which is placed a lengthened horizontal cone or plug, the point or apex in the same direction as the sharp edge of the coulter; at the back of this plug is fixed a rope, upon which is strung as many drain pipes as its length will allow; a simple process is adopted to add fresh coils of rope, or more pipes are required. A hole is then dug in the ground, say two feet deep and a foot wide, as in the present experiment, gradually sloped at the back, so as to allow the rope with the pipes to enter freely, and the coulter is placed upright in the hole, with its sharp edge and the point of the plug in the direction the drain is to be formed; at the end of the horizontal iron framing, farthest from the coulter, is fixed a horizontal pulley, through which a wire rope is passed, fastened at the other end to a capstan placed at the opposite extremity of the field, up to which the drain is to be formed. Four horses were harnessed to the capstan, which they turned with very trifling exertion, thus drawing the coulter through the land, the plug forming the drain, and the ropes with the pipes following. The time occupied in laying the nine chains of piping was 33 minutes, and the surface land was not more disturbed than if a knife had been drawn through it; when the coulter was drawn up to the capstan, it was raised out of the ground, the rope disengaged from the plug, and the horses hitched to the other ends of the coils of ropes, which they immediately drew out, leaving the tiles accurately placed, as was ascertained by digging down to the drain. Another drain was then immediately formed in the same manner, at a parallel distance of about 15 feet, the capstan still in the same position. The estimated expense of draining land in this manner, independent of the cost of tiles, is about fourpence a chain. From 6000 to 7000 feet can be drained in one day, at an expense of about 30s.

GERMAN AGRICULTURE.

Each German has his house, his orchard, his roadside trees, so laden with fruit, that if he did not carefully prop up and tie together, and in many places hold the boughs together with wooden clamps, they would be torn assunder by their own weight. He has his corn plot, his plot of mangold wurtzel, or hay, for potatoes, for hemp, &c. He is his own master, and he therefore, and every branch of his family, have the strongest motive for constant exertion. You see the effect of this in his industry and in his economy.

In Germany nothing is lost. The produce of the trees and the cows is carried to market; much fruit is dried for winter use. You see it lying in the sun to dry. You see strings of them hanging from their chamber windows in the sun. The cows are kept up for the greater part of the year, and every green thing is collected for them. Every little nook, where the grass grows by roadside and river, and brook, is carefully cut with the sickle, and carried home on the heads of the women and children in baskets, or tied in large cloths. Nothing of any kind that possibly be made of any use is lost; weeds, nettles, nay, the very goose grass which covers waste places, is cut and taken for the cows. You see the little children standing in the streets of the villages, in the streams which generally run down them, busy washing these weeds before they are given to the cattle.

They carefully collect the leaves of the marsh grass carefully cut their potato tops for them, and even if other things fail, gather green leaves from the woodlands. One cannot help thinking continually of the enormous waste of such things in England—of the vast quantities of grass on banks, by road-sides, in the openings of plantations, in lanes, in church-yards, where grass from year to year springs and dies, but which, if carefully cut, would maintain many thousand cows for the poor.

To pursue still further this subject of German economy. The very cuttings of the vines are dried and preserved for winter fodder. The tops and refuse of hemp serve as bedding for the cows; nay, even the rough stalks of the poppies, after the heads have been gathered for oil, are saved, and all these are converted into manure for the land. When these are not sufficient, the children are sent into the woods for moss, and all our readers familiar with Germany will remember to have seen them coming homeward with large bundles of this on their heads. In autumn, the falling leaves are gathered and stacked for the same purpose. The fir cones, which with us lie and rot in the woods, are carefully collected and sold for lighting fires.

In short, the economy and care of German peasants are an example to all Europe. They have for years, nay ages, been doing that, as it regards agricultural management, to which the British public is but just now begining to open its eyes. Time, also, is as carefully economised as everything else. They are early risers, as may well be conceived, when the children, many of who come from a considerable distance, are in school at six in the morning. As they tend their cattle or their swine, the knitting never ceases, and hence the quantities of stockings and other household things which they accumulate is astonishing.—*Hewitt*

PRODUCE FROM A SINGLE GRAIN OF WHEAT.

An experiment on the fertility of wheat has, during the past year, been carried out in the garden of Mr. Stowe, a surgeon at Buckingham, of which the following is a correct account. On the 13th of July, 1850, a single grain of wheat was sown in the garden; the plant came up in ten days, and grew luxuriantly till the 13th of September; it was then taken up and divided into slips, and replanted, and suffered to remain till the 16th of April of the present year. The weather then becoming favourably wet, they were all taken up again and divided into no less than 114 plants, these being planted, were permitted to stand till the present month of August, when they were productive of the amazing number of 520 ears of wheat, many of them of full size, containing more than 50 grains of corn. The crop was gathered before it was fully ripened, as the birds attacked it in spite of revolving feathers and a protecting net. Whether the result of this trial will strengthen the opinion of those who contend for the thin sowing of wheat in ordinary field cultivation, must be left to the judgment of more practical agriculturists, but of the amazing productiveness of the wheat plant, under such treatment, any one may easily satisfy himself by repeating the experiment.—*English Paper.*

BURNING WATER.

A plan has been projected for decomposing water and obtaining light from the two gasses, oxygen and hydrogen, of which it is composed, the first being the best known supporter of combustion, and the other being combustible. The following notices of this invention will give some information as to its progress:—"Our readers are familiar with the fact that an American (Paine) had succeeded in decomposing water, and so combining its hydrogen with carbon so as to form an illuminating gas, which he proposed as a substitute for the gas produced by the destructive distillation of coal in iron retorts. The invention at first attracted a great deal of attention; but so far as we have been able to learn, the process by which the gas was produced was both costly and uncertain. Since the period at which the American discovery was announced, a German chemist of great eminence has announced the discovery of a process by which the water may be decomposed, and carburretted hydrogen formed at little more than a nominal cost, with unerring certainty, and in, practically, an unlimited quantity. The gas so produced is said to possess illuminating power far exceeding that of ordinary coal gas, and capable of producing, in the act of combustion, such an amount of caloric as to constitute an economic substitute for coal in the generation of water steam for the propulsion of boats and locomotives. The *Times* thus alludes to this strange and most interesting invention:—'*Steam and Gas without Coal.*—It is scarcely thirty years since a Committee of the House of Commons doubted the possibility of travelling at the rate of fifteen miles an hour. Winsor, too, was laughed at when he proposed to light street lamps with gas; Dr. Lardner endeavoured to prove the impossibility of a steam-ship ever crossing to America; Professor Wheatstone was treated as a clever enthusiast, when he first promulgated his ideas of the electric telegraph; yet all these things have been brought into successful operation. One or two of the principal railway companies have lately entered into an arrangement with Mr. Shepard, who has patented an invention for the decomposition of water, and negotiations are pending with some of the steam-boat companies for the application of this patent to propel steam-boats, locomotives, and other engines, by which the cost of working machinery and generating gas is likely to be greatly reduced.'

DISLOCATION OF THE JAW.

Mr. South says, in his "Household Surgery," that this may happen on one or both sides, more commonly the latter. It mostly takes place in gaping, when the lower jaw being violently and quickly drawn down, its joint-ends slip from their sockets, and the jaw becomes firmly fixed, keeping the mouth wide open. The face, in consequence, is lengthened considerably; the expression altered and vacant; the power of speaking lost; and any attempt at utterance producing only strange and incomprehensible noises and the oddest contortions of the countenance possible, and often rendered exceedingly ludicrous by the various shifts the person employs in endeavouring to make himself understood. An amusing illustration of this accident was used to be enacted by Abernethy, with great humour. An officer was dining with a party of friends, and his laughing faculties having been excited, he was rattling along and laughing heartily, when suddenly he became dumb, or rather, he ceased to be able to speak, his mouth remained wide open, and he uttered only a vast variety of strange sounds. At first it was supposed he was endeavouring to amuse the company by these uncouth noises; but soon it was perceived to be no joke, and that he was really unable to close his mouth or speak. After a little while he managed to make them understand he had dislocated his jaw, and that it would be necessary to send for a doctor, who in due time arrived, and set about replacing the jaw. But whether it was he did not know how to perform the operation, or whether he put in one side, and whilst attempting to put in the other, the former slipped out again, as it will sometimes do, he could not manage the job at all, and the officer, who had frequently suffered from the accident before, and had it replaced without difficulty, getting angry, and at last furious, at his bungling, induced the doctor to

change his tack, and declare the sufferer was mad. This of course alarmed the whole party, who seized on the unfortunate soldier, carried him to bed, and put him in a straight waistcoat, whilst the doctor prepared for shaving his head and putting on a blister. The poor fellow finding by this time he could not hope by further exertions to make his condition understood, or free himself from his tormenters, and the doctor still persisting he was mad, he at last made signs for pen ink and paper, which it was thought he could do no mischief with, and that his asking for them was rather a sign of returning reason, they were brought, and he immediately wrote, 'For goodness sake send for Mr.——, The surgeon of my regiment, he knows what's the matter with me.' The letter was dispatched, the surgeon soon arrived, the dislocation was quickly put to rights, and the ignorant blockhead who had caused all the turmoil slunk off in disgrace.

What Canada is capable of.—The Canada Company's prize wheat, for which their premium of £25 was awarded at the Provincial Exhibition, held at Niagara in the autumn of last year, and for which a similar sum was awarded at the Exhibition for British America held subsequently at Montreal, has gained a prize at the Great Exhibition of all Nations in London. This should stimulate farmers to improve their grain, and compete for the annual premiums awarded under the direction of the Provincial Agriculture Association. There are some parts of the world—such as Australia—where wheat larger in the berry has been grown, but the flour manufactured from the Canadian wheat is not, we believe, surpassed. The yield per acre of the wheat that gained the above prize was 36 bushels, weighing 67 lbs. per bushel measurement, and we are inclined to think that a comparison in these respects—which are really the important ones—would show Canada to advantage.—*Colonist.*

TASTE OF TURNIPS IN BUTTER.

About six or seven years ago, I saw it stated in a provincial newspaper, that to feed cows with turnips immediately after being milked, and on no account to give them any a short time before milking prevented the milk or butter from tasting of turnips. The method I pursue is this: immediately after being milked in the morning, they get as many turnips as they can eat. During the day they are fed on hay, and immediately after milking at night, they get the same quantity of turnips.—The milk and butter are very much admired by all who take them, both for color and flavor, and I have often been called upon to give a statement of our feeding by visitors. I have several times given the cows turnips a short time before being milked, just to prove the thing. On such occasions the milk and butter tasted strongly of turnips.—*Gardeners Chronicle.*

Young Stock.—These should be provided with a tight shed, have a yard for excercise, and be so fed as to keep them continually growing. They should in addition to hay or fodder, receive a feed of grain daily. Oats is the best for such purpose. They should be salted twice a week; it would probably be better to give them a mixture of equal parts of ashes, lime, and salt.—*American Farmer.*

Durability of timber depends more on the treatment after cut, than the time of cutting. The amount of sap in a tree is about the same at all times. But a large log, in hot weather, with the bark on, having no chance to dry, soon decays; but if immediately sawed into boards, they dry in a few days, and become hard and durable.

Save all the bones, and having mashed them, place them in a tub, and pour over them a quantity of sulphuric acid. They will be dissolved, and may then be applied as manure to your turnip and other crops. Not a bone should be thrown away.—*Germantown Telegraph.*

DOUBLE FRUITAGE.

The Pittsfield (Mass.) *Culturist* notices a grafted pear tree on the premises of Mr. Gideon Beals of Windsor, which produces two crops of pears each year. For three years in succession, says the *Culturist*, the tree has blossomed at the ordinary time in the spring, and perfected in due time, (1st to 10th September) a fair yield of large and beautiful pears. For the same three years it has blossomed a second time in the early part of July and started a second crop of pears which go on towards maturity until the season closes, and stops their progress. They are now one and a-half inches long and three-quarters of an inch in diameter, and thrifty in appearance. Of the first crop there is said to be more than a bushel on the tree, and that in numbers the two crops are about equal, and that there is not a limb in the tree but has both kinds upon it.

Fruit Trees.—If the bark on your fruit trees is affected by moss, scrape it off, destroy the moss by burning, and give the body of the tree a dressing of a mixture composed of 1 gallon soft soap, 1 lb. flour of sulphur, and 1 qt. of salt, well stirred together—to be put on with a hard brush. Such dressings destroy the tendency of the trees to become mossy, destroy the germ of insects which may be lodged in the bark, and encourage a healthful growth the ensuing spring.—*American Farmer.*

Japanese Gardens.—The gardeners of Japan display the most astonishing art. The plum tree, which is a great favourite, is so trained and cultivated that the blossoms are as big as those of dahlias. Their great triumph, however, is to bring both plants and trees into the compass of the little garden attached to the houses in the cities. With this view, they have gradually succeeded in dwarfing the fig, plum and cherry trees and the vine, to a stature so diminutive as scarcely to be credited by an European; and yet these dwarf trees are covered with blossoms and leaves. Some of the gardens resemble pictures in which nature is skilfully modelled in miniature—but it is living nature! Meylon, whose work on Japan was published at Amsterdam in 1830, states that in 1826, the Dutch agent of Commerce at Nagansi was offered "a snuff box, one inch in thickness and three inches high, in which grew a fig tree, a bamboo and a plum tree in bloom."

PUMPKIN PIES.

BY A VERMONTER.

(*From the New York Tribune*)

Let some folks boast of spicy mince,
Care not a fig for such do I;
Or largely talk of sweetened quince,
Fine as the luscious grape of Linzt,
Plums doubly dipped in Syrian dye—
I deem them tasteless all as flints,
Compared with one good pumpkin pie.

I know our pumpkins do not claim.
The honored growth of foreign soil;
They never felt the torrid flame,
And surely they are not to blame,
Though reared not by the boudman's toil,
Incline where man, to burden tame,
Unpaid consents to tug and broil.

Talk not of vineyards broken down,
And fields that droop with oil and wine;
Where burning suns with ripeness crown
The sweets that man's best manhood drown,
By lying poets sworn divine.
I'd rather have than all—don't frown—
The product of my pumpkin vine.

See, on you melon covered height,
My chosen fruit, like globes of gold,
Lies ripening in the sunbeam light;
Ah, 'tis a stomach-staying sight.
And soon to house them from the cold
Shall freemen with strong hands unite,
Paid laborers and freemen bold.

And then the girls who make our pies,
Bless them! all other maids outshine;
Their raven locks, and hazel eyes,
And cheeks, whose ever changing dyes
The lilly and the rose combine,
Make mad the hearts that love the prize
Of all this loveliness divine.

Vermont! thou art a glorious State,
Though small in acres and in skies;
But 'tis not length that makes one great,
Nor breadth that gives a nation size
Thy mountains and thy mountain air
Have reared a noble race of men,
And women, fairest of the fair,
Their labors and their love to share;
Where shall we see thy like again?
I love them all, which most I shan't advise,
Thy mountains, maidens, or thy pumpkin pies.

GOLD DUG FROM AN ONION PATCH.—Robert Smith, at the San Jose Mission, California, has raised two acres of onions, which yielded 2,500 sacks, averaging 42 pounds each, and the average of the whole is 24 ounces each! He was selling them at 29 cents per pound. If he gets but 15 cents per pound for his entire crop, it will amount to the snug sum of $30,750! This will do pretty well for two acres of wild land. This is said to be but the average yield of the onion crop throughout the Santa Clara valley. It eclipses famous old Wethersfield entirely, and shows that an onion patch is by no means a despicable gold placer. Neither indeed is a potato patch, nor a hayfield, in that most wonderful country. Dr. Basham of Santa Clare, raised 800 bushels of potatoes to the acre there, and sold them at from six to seven cents per pound. Gen. Vallejo sold his standing grass for $15,000. The party purchasing it, expended $20,000 to cut and cure the same, and afterwards realized $100,000 profit in the sale of hay! The market price for hay is somewhere between $30 and $50 per ton. —*Albany Register.*

WEIGHTS AND MEASURES.—The following table of the number of pounds of various articles to a bushel, may be of interest to our readers:

Of wheat, sixty pounds.
Of shelled corn, fifty-six pounds.
Of corn in the cob, seventy pounds.
Of rye, fifty-six pounds.
Of oats, thirty-six pounds.
Of barley, forty pounds.
Of potatoes, sixty pounds.
Of bran, twenty pounds.
Of clover seed, sixty pounds.
Of timothy seed, forty-five pounds.
Of flax seed, forty-five pounds.
Of hemp seed, forty-four pounds.
Of buckwheat, fifty-two pounds.
Of blue grass seed, fourteen pounds.
Of castor beans, forty-six pounds.
Of dried peaches, thirty-three pounds.
Of dried apples, twenty-four pounds.
Of onions, fifty-seven pounds.
Of salt, fifty pounds.

Mr. Thomas Park, of Pickering, brought us a turnip the other day, which measured two feet eleven inches and a-half in circumference, and twelve inches in depth.—*Ontario Reporter.*

RATS.—The following, from the Buffalo *Republic*, is worth trying: "Rats may be expelled from your cellars and granaries simply by scattering a few stalks and leaves of *mullen* in their paths. There is something very annoying in this plant, to the rat. It affords, therefore, a very easy remedy for a most perplexing evil, and much more economical and less troublesome than gunpowder, 'rat exterminator,' cats or traps. The mullen is a very common production, and may be found in almost every field as well as in pastures, and by the sides of the highways."

VINEGAR.—Many families purchase their vinegar at a very considerable expense; some "make do" with a very indifferent article; and others, for want of a little knowledge and less industry, go without. It is an easy matter, however, to be at all times supplied with good vinegar, and that without much expense. The juice of one bushel of sugar beets, worth twenty-five cents, and which any farmer can raise without cost, will make from five to six gallons of vinegar, equal to the best made of cider or wine. Grate the beets, having first washed them, and express the juice in a cheese press, or in many other ways which a little ingenuity can suggest, and put the liquor into an empty barrel; cover the bung with gauze, and set it in the sun, and in twelve or fifteen days it will be fit for use.—*Farmer's Advocate.*

An old Scottish proverb says "Muck is the mother of the meal-chest."

MACE is the second coat of the kernel of the nutmeg.

To Societies and Subscribers.—As the present is the last number for the year, we beg to state that we shall be exceedingly glad to receive the amounts due us from those Societies and individuals who are in arrears. The *Agriculturist* has been a heavy drag upon the proprietor, but under the new arrangements we hope for a brighter future.

Morton's Cyclopedia of Agriculture.—This original and elaborate work maintains as its publication progresses, the high opinion we have expressed on several occasions. Each article is written by a person distinguished for his practical knowledge of his subject, and the printing, engraving, &c., are executed in the best style of their art. When completed it will form the most valuable book extant on the subject of Agriculture, in all its wide ramifications, in the English language, bringing down all improvements and discoveries to the latest moment. We shall have frequent occasion to refer to it, in subsequent numbers. It can be procured in parts, as published in Scotland, of Mr. Thomas Maclear, Bookseller, Yonge Street, Toronto, or of his travelling agents in the country.

"Carbonic Acid" came safe to hand too late for the present number. As he thinks that our correspondent on ventilation, in our last, has somewhat misrepresented his character, and professing ourselves lovers of fair play, Mr. Carbonic Acid will be heard in his own defence in our next.

Improved Breeds of Cattle.—We regret to be informed that Mr. Parsons is prevented by an attack of sickness, from replying to Messrs. Tye and Sotham, as promised in our last.

IMPORTANT TO

FARMERS AND GARDENERS!

THE Subscriber is prepared to supply in any quantities to suit purchasers,

GROUND BONE FOR

MANURE.

It is quite unnecessary to state here the superior qualities of Ground Bone over any other kind of Manure, especially for turnips, as it is well known to all practical agriculturists.

PETER R. LAMB,
Near the Toronto Necropolis, East of Parliament Street

N B. All Orders or Communications left at Mr. T. Lailey's Clothing Store, King Street, or through the Post Office, will be punctually attended to.

April, 1851. 33-3m

THRASHING MACHINE.

LETTERS PATENT.

Time and Labor Saved are Money Earned.

THE SUBSCRIBERS having secured to themselves the exclusive right of manufacturing and vending to others to use within the territory of Upper and Lower Canada,

SEVERANCE'S CELEBRATED IMPROVED HORSE POWER & THRASHING MACHINE one of the most valuable time and labour saving Machines ever devised by human ingenuity, respectfully inform the public that they have just completed a new and extensive Factory on Wellington Street, extending from Prince to George Street, which gives them more than double the accommodation they had in the old shops, which will hereafter, they trust, enable them to supply the whole farming community of the United Provinces with a Machine that will thrash and clean more grain in a day, with less expense and with greater cleanliness, than any other known invention—only requiring two horses.

We beg leave to say to our customers and friends, that we are again prepared to furnish those in want of Thrashing Machines with an article superior even to those heretofore manufactured by us.

Our long experience in making and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of work, and amount of it they can do, our Thrashing Machines are unequalled by any in use. And while the grain is thrashed clean and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill or any market.

All orders addressed to us or our Agent, Wm. Johnson, will be promptly attended to.

Machines shipped to any port in Canada, and every one warranted to be as good as recommended.

Liberal terms of payment allowed.

B. P. PAIGE & CO.

Whereas, Letters Patent were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using or manufacturing any imitation article, as all infrigements will be dealt with according to the law of the land.

All genuine Machines will be accompanied by a Deed signed by B. P. Paige, the owner of the right, giving the purchaser the right to use or transfer the same. Without such a Deed no person will be safe in purchasing or using said Machines.

B. P. PAIGE.

Agent at Hamilton, Mr. Rasweli Wilson.

Toronto, July 15th, 1851. 42-6m